



## *2025 Level of Service Asset Management Plan*



Prepared for:

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## **The Township of Macdonald, Meredith & Aberdeen Additional**

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## Introduction

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### **Objectives as defined by the Ontario Reg. 588/17**

A Township's asset management plan must include for each asset category, the current levels of service being provided, determined in accordance with qualitative descriptions and technical metrics based on data from at most the two calendar years prior to the year in which all information required under this section is included in the asset management plan.

For each asset category, a summary of the assets in the category, the replacement cost of the assets in the category, the average age of the assets in the category, determined by assessing the average age of the components of the assets, the information available on the condition of the assets in the category, and a description of the Township's approach to assessing the condition of the assets in the category, based on recognized and generally accepted good engineering practices where appropriate.

For each asset category, the lifecycle activities that would need to be undertaken to maintain the current levels of service for each of the 10 years following the year for which the current levels of service are determined and the costs of providing those activities based on an assessment of the following: The full lifecycle of the assets, the options for which lifecycle activities could potentially be undertaken to maintain the current levels of service and the risks associated with the options.

### **Data Scope and Currency**

This Asset Management Plan has been prepared using the most current asset inventory, condition, inspection, and financial information available to the Township at the time of preparation. The data supporting this Plan has been compiled from multiple sources and reflects information collected over different periods, including engineering studies, inspection reports, operational records, and asset management systems. As the Township continues to enhance data completeness and accuracy through the ongoing implementation of RFAM and Balance software, asset information will be refined and incorporated through regular updates to this Plan.

## **Phase-in schedule**

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### **Asset management plans, proposed levels of service**

On or before July 1, 2025, every asset management plan prepared under Section 5 of Ontario Regulation 588/17 must include the following additional information:

#### **1. Proposed Levels of Service**

For each asset category, the levels of service that the Township proposes to provide for each of the 10 years following adoption of this Plan, including:

- a) For core infrastructure assets, the qualitative descriptions and technical metrics prescribed in Tables 1–5 of the Regulation.
- b) For all other infrastructure assets, qualitative descriptions and technical metrics established by the Township.

#### **2. Explanation of Appropriateness**

An explanation of why the proposed levels of service are appropriate, including:

- a) Options considered and associated risks to long-term sustainability.
- b) Differences between current and proposed levels of service.
- c) Whether proposed levels are achievable.
- d) The Township's ability to afford the proposed levels.

#### **3. Proposed Performance**

The proposed performance of each asset category for each year of the 10-year period determined in accordance with established performance measures.

#### **4. Lifecycle Management and Financial Strategy**

A lifecycle management and financial strategy setting out:

- a) Required lifecycle activities to support proposed service levels.
- b) Estimated annual capital and significant operating costs for 10 years.
- c) Projected annual funding available.
- d) Identification of funding shortfalls, if any.
- e) Risk mitigation strategies where full lifecycle activities cannot be undertaken.

## **Social Trends**

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Asset management planning must consider broader social, regulatory, technological, and environmental trends that may influence service delivery and infrastructure needs over time.

These trends may include changes in provincial legislation and funding programs, evolving accessibility standards, demographic shifts, technological advancements in infrastructure monitoring and maintenance, and increasing emphasis on environmental sustainability and climate resilience.

The Township will continue to monitor these external influences and incorporate relevant considerations into future updates of this Asset Management Plan to ensure long-term service reliability and financial sustainability.

## Township Policy Documents

Establishing a Level of Service (LoS) strategy began with a collection and review of Township documents and bylaws.

<b>Documents</b>	<b>Descriptions</b>
<i>Insurance Documents</i>	<i>Reviewed and updated replacement values</i>
<a href="#"><u>Emergency Response Plan</u></a>	<i>Identifies municipal facilities and infrastructure critical to emergency response and continuity of operations, informing asset prioritization within the Asset Management Plan.</i>
<i>Operation budget</i>	<i>Ongoing operational budget</i>
<i>Capital budget (included in annual budget)</i>	<i>Capital expenditures</i>
<i>Financial Plans</i>	<i>PSAB policies, TCA, ARO, FIR</i>
<i>Asset Retirement Obligations (ARO)</i>	<i>Policy by-law</i>
<i>Strategic Asset Management Policy</i>	<i>Establishes the Township's principles and governance framework for managing municipal assets in a sustainable, risk-based, and financially responsible manner.</i>
<i>Energy consumption</i>	<i>Climate change / Net zero O.Reg. 507/18</i>
<i>Procurement Policy</i>	<i>Include lifecycle expenses and Asset Retirement Obligation as part of financial submission</i>
<i>Fire Service Review</i>	<i>Review Fire department level of service</i>

## Legislative Requirements

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A review of provincial legislative requirements was undertaken as part of the LoS strategy.

Asset category	Legislative requirements
All	O.Reg. 588/17 Jobs and prosperity act of 2015 PSAB Asset Retirement Obligation (ARO)
Water	DWQMS legislation Safe Drinking Act of 2002
Storm water Culverts < 3 m	Environmental Compliance Act Environmental Protection Act O. Reg. 406/19
Roads	MMS O. Reg. 239/02 Traffic Safety Act
Buildings	Ontario Building Code AODA Compliance O. Reg. 213/07
Landfill sites	ECA environmental compliance approval O. Reg. 232/98, O Reg. 347 guidelines B-7
Fleet	Regular and routine maintenance as described by MTO
Emergency	Fire protection and prevention act O. REG. 378/18
Land	Parks, open spaces, trails
Cemetery	O.Reg 130/92
Washroom inspections	O.Reg. 480/24

## Citizen level of service

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As part of the asset management initiative Township staff reviewed process and strategies which effected citizen level of service.

<b>Asset</b>	<b>Description</b>
Service delivery plan	Township plan outlining the delivery objectives
Injury and hazards reports	Incident reporting capabilities
By-law infractions	By-law infraction monitoring
Citizen service request	Online ability to request services/report an issue.
Patron feedback	Provide online feedback when attending Township facilities
Building code compliancy	Ontario Disability Act <a href="#">2023 Accessibility Compliance Report</a>
Electronic inspections	Manage inspections through electronic means
Culvert management	Installation, repair and maintenance of culverts.

## 2025 Capital Plan

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The Township’s 2025 budget reflects total estimated expenditures of \$6,071,853. Projected non-tax revenues, including grants, user fees, and other sources, are estimated at \$3,596,853. The resulting municipal tax levy requirement for 2025 is approximately \$2,475,000.

A significant portion of municipal revenues is allocated to essential services, regulatory requirements, and existing infrastructure obligations before discretionary capital projects can be undertaken. As a result, capital planning decisions must be carefully prioritized within the Township’s available financial capacity.

<b>Agency</b>	<b>2025 Budget</b>
<b>Education</b>	\$1,867,867.61
<b>Transportation</b>	\$1,186,720.00
<b>Environmental</b>	\$1,053,980.00
<b>Emergency</b>	\$ 956,650.00
<b>Social Services</b>	\$ 618,840.00
<b>Recreation</b>	\$ 461,765.00
<b>Policing</b>	\$ 239,191.00
<b>Landfill</b>	\$ 153,270.00

## 2026 and Beyond

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The Township will continue to advance its asset management program through annual updates to this Asset Management Plan. Future updates will incorporate newly collected asset inventory, inspection results, refined lifecycle data, and improved financial forecasting as asset management systems and data maturity continue to evolve.

Ongoing priorities include the continued population and validation of RFAM and Balance asset management software, enhanced integration between operational and financial data, expansion of inspection programs, and refinement of risk-based decision-making.

Council will be provided with regular updates on asset condition trends, financial pressures, and emerging risks to support informed decision-making and long-term infrastructure sustainability.

## Community Overview

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The area encompassed by the Township of Macdonald, Meredith and Aberdeen Additional originally was inhabited by the Ojibway. After the Canadian government and the Ojibway signed the Huron-Robinson Treaty of 1850, surveyors were sent into this area to examine the territory. What later resulted was the creation of three separate townships. The first of the three townships created was Macdonald Township in 1863. Named after Sir John A. Macdonald, this township became home to the village of Echo Bay.

In 1875 Meredith Township was surveyed. This township acquired its name from the Honourable Sir William Meredith who was elected to the Legislative Assembly in 1872 and later appointed Chief Justice of Ontario in 1912. In June 1892 Macdonald Township and Meredith Township were incorporated as a municipality.

The last township was surveyed in 1877. Originally labeled Coffin Additional (and later renamed to Aberdeen Additional in 1900), this area was known for its wide and extensive valleys.

In 1899, Aberdeen Additional joined the Township of Macdonald and Meredith to create the municipality which exists today.

## Accessibility for Ontarians with Disabilities Act Compliance

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The Corporation of the Township of Macdonald, Meredith & Aberdeen Additional [Multi-Year Accessibility Plan 2023-2027](#) and [Accessible Customer Service Policy](#) outline the initiatives the Township plans to undertake to ensure compliance with Accessibility for Ontarians with Disabilities Act, 2005 (AODA). Additionally, the plan outlines how the Township will address the needs of our growing and diverse community as we work toward a fully accessible and inclusive community.

The Township of Macdonald, Meredith & Aberdeen Additional is committed to providing a barrier-free environment for all stakeholders including our employees, job applicants and any visitors and other third parties, who may enter our premises, access our information, or use our services

The Township of Macdonald Meredith & Aberdeen Additional is committed to treating all people with dignity, respect and in a way that maintains individual independence. We believe in integration and equal opportunity and are committed to meeting the needs of people with disabilities in a timely manner. The Township is committed to preventing and removing barriers to accessibility and meeting accessibility requirements under the Accessibility for Ontarians with Disabilities Act.

## Future growth

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Future growth and development planning will be guided through the Township's ongoing Joint Official Plan update and will be followed by a review and update of the Zoning By-law (currently dated 2010). These planning documents will establish land use direction, growth policies, and development standards that influence long-term infrastructure requirements and service delivery expectations.

The Township has access to ArcGIS mapping services through the Planning Board, including interactive zoning, road classifications, and municipal water and sewer infrastructure layers. In addition, the Township utilizes handheld GPS technology to support ongoing asset inventory collection and validation in the field. This combination of planning-level mapping and field-based data collection strengthens the accuracy of infrastructure records and supports informed capital planning.

As asset data continues to be refined and the [Official Plan](#) and [Zoning By-law](#) are updated, the Township will align growth planning with infrastructure capacity, emergency service coverage, and lifecycle investment needs to ensure that future development is supported by sustainable and financially responsible asset management practices.

## Human Resources

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Implementation of a functional and sustainable Asset Management program requires ongoing organizational commitment and appropriate human resources capacity. Ontario Regulation 588/17 requires regular updates to asset inventories, levels of service, lifecycle planning, and financial forecasting. As such, asset management is not a one-time initiative, but an ongoing operational responsibility.

The Township has invested in developing an asset inventory repository and implementing asset management software; however, continued data validation, inspection tracking, lifecycle monitoring, and financial integration will require dedicated staff time and technical expertise. Asset management relies on the integration of tabular data (inventory), graphical data (GIS mapping), and financial data (capital and operating costs), and the Township must ensure that sufficient internal knowledge or external support exists to manage these components effectively.

As the Township refines its levels of service and lifecycle strategies, it will periodically assess whether existing staffing levels and skill sets are sufficient to support inspection programs, work order management, runtime tracking, and capital planning requirements. Certain specialized inspections or technical assessments may continue to require qualified external contractors.

The Township will also continue implementing technology solutions, including electronic work order systems and asset tagging (QR code identification), to improve efficiency, reduce errors, and enhance data accuracy across all asset categories.

## Level of Service delivery review

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The Township has adopted a Strategic Asset Management Policy (2019) that establishes roles, responsibilities, and guiding principles for municipal infrastructure management. This policy provides the governance framework for asset management activities and aligns with the requirements of Ontario Regulation 588/17.

Over the past several years, the Township has made significant progress in expanding and refining its asset inventory, condition assessments, and lifecycle forecasting. Ongoing governance activities include data validation, integration of engineering studies, annual budget alignment, and periodic review of service levels to ensure continuous improvement of the asset management program.

### **Service Review**

- Identify common gaps and deficiencies in data sets and data management
- Review and document current processes, workflow, and data collection
- Review regulatory compliance associated with the assets and levels of service
- Outline the human resource capacity required to achieve the objectives

### **Strategy and Planning**

- Track current levels of service
- Identify resources to manage and document lifecycle activities
- Track the costs of repairs, inspections, and replacements of individual assets.

### **Components to monitor**

- Operational condition
- Responsiveness to service requests
- Adaptability to climate change
- Energy saving, CO<sup>2</sup> reduction
- Infrastructure resilience
- Emergency responsiveness

## Adoption of technologies

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**The adoption of technology should increase efficiency, reduce expenses and maximize asset life expectancy.**

The Township completed a [Municipal Modernization – Digital Transformation Report \(2022\)](#), which identified opportunities to enhance digital service delivery, records management, and operational efficiency. The findings of this report continue to inform improvements to asset management systems, electronic inspections, work order tracking, and public engagement tools.

Adopting electronic records is part of the broader trend of municipal modernization and innovation, enabling municipalities to leverage technology to improve services and meet the evolving needs of their communities.

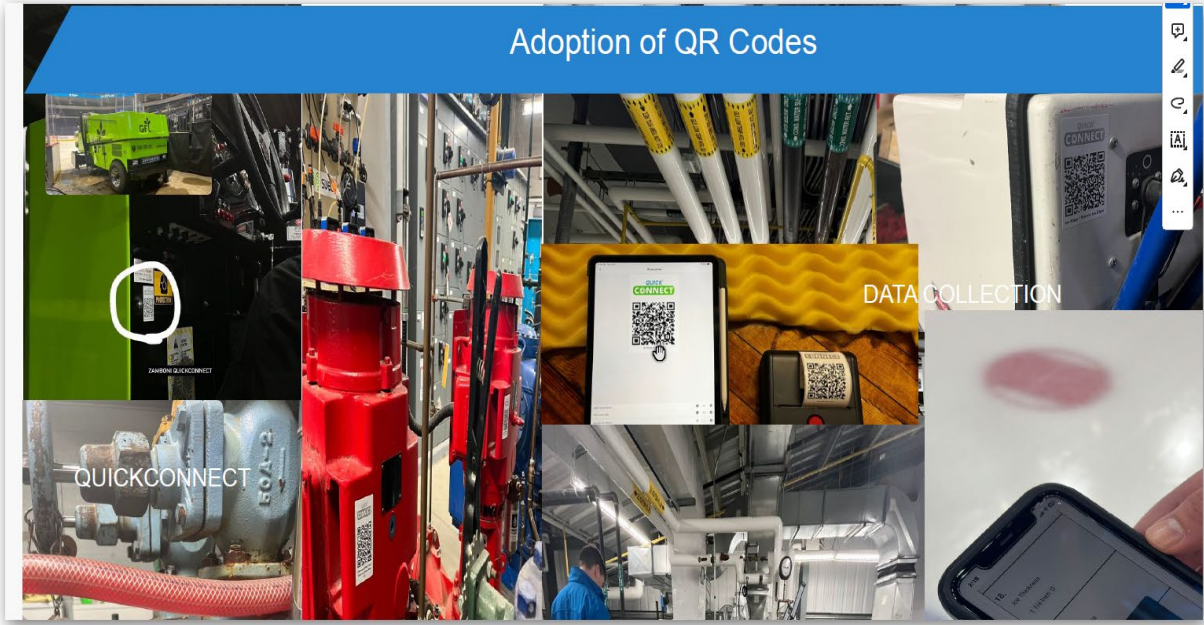
Townships are increasingly adopting electronic records management systems to streamline operations, improve access to information, and enhance transparency and efficiency. Electronic record keeping enables faster and more efficient access to information, both for municipal staff and the public, improving transparency and potentially reducing response times for requests.

Electronic records can facilitate the Townships' ability to comply with various regulations ensuring privacy, and fulfilling various provincial requirements

Adoption of various forms of technology has become useful in extending the life of assets. Complex things like equipment automation or simple things like utilizing QR codes on inventory eliminates costly mistakes by operators and service providers.

Building management technologies provide managers and operators with centralized control, monitoring and reporting. Facility managers can remotely monitor and control the status and health of the various components including electrical, mechanical, and plumbing. By monitoring the building's energy consumption in real time, managers can effectively manage their energy consumption thereby eliminating unnecessary energy usage and reducing costs.

# Adoption of QR Codes



## Asset Management Pillars

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### Asset Management Policy

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Estimated useful life versus remaining service life

**Useful life-** A policy that evokes the operation and financial capability of a Township to replace assets at end of useful life regardless of asset functional conditions.

**Service life-** The ongoing service and maintenance beyond the useful life and until an asset has reached its end of service

### Procurement Policy

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Capital equipment procurement decisions consider full lifecycle costs, including acquisition, installation, operation, maintenance, and eventual asset retirement obligations where applicable. The Township evaluates total cost of ownership, not solely initial purchase price, to support long-term financial sustainability and service reliability.

### Staff retention/training

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An effective Asset Management Plan supports knowledge retention and succession planning by documenting asset inventory, condition data, lifecycle history, and maintenance records in a structured and accessible manner. This reduces reliance on institutional memory and facilitates continuity during staff transitions.

The Township will continue to support staff training and professional development related to asset management practices, data management systems, inspection protocols, and lifecycle planning. Maintaining accurate and up-to-date asset records ensures that historical maintenance information is preserved and available to inform future operational and capital decisions.

### Asset Classification

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Core assets	linear assets such as roads, sewer, storm and water mains along with its linked components such as valves, hydrants and manholes.
Non-core assets	buildings, fleet and machinery
Natural assets	trees, water courses, parks, trails and open spaces
Rolling stock	consumable items such as filters, sand, salt

### Inspections

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Core assets,	Roads, along with linked components such signs, poles, ditches, water & sewer mains, hydrants, streetlights, etc.
Non-core assets	Buildings, fleet and machinery

## Citizen Engagement – Public Input & Service Requests

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The Township provides multiple avenues for residents and interested parties to provide input on municipal services and infrastructure. Service requests are logged and tracked based on location, deficiency type, required actions, deadlines, and follow-up notes to ensure timely response and accountability.

In 2024, the Township completed a [Strategic Plan](#) developed through community engagement, incorporating resident feedback to guide long-term priorities and infrastructure investment decisions. The Township is also currently conducting a Leisure Services Survey to gather input on recreational programming and facility use, which will inform future capital planning and service level decisions.

Additional engagement tools include a “Report an Issue” function on the Township website, formal tracking of road-related complaints, and ongoing monitoring of facility usage at the Sportsplex (including skating, events, and recreational programming). The Township will continue to leverage available technologies and digital platforms to enhance public engagement and collect user feedback in support of evidence-based asset management planning.

## Climate Change

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The Township completes annual energy reporting in accordance with applicable regulatory requirements and continues to track energy consumption by building and fuel type. The asset inventory will be progressively refined to identify and link individual assets to energy consumption where feasible. This ongoing data integration will support improved monitoring, benchmarking, and the identification of achievable energy efficiency and reduction opportunities over time.

## **Asset Replacement Policy**

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A fixed asset replacement policy outlines the procedures and criteria for deciding when and how to replace long-term assets with new ones. The policy distinguishes whether the asset is replaced at end of useful life or at the end of service life. This policy must include;

- Asset Condition and Performance:** Regularly assess the condition, performance, and remaining useful life of existing assets to determine if they are still meeting operational needs.
- Cost Analysis:** Compare the cost of maintaining or repairing an existing asset versus the cost of replacing it with a new one.
- Technological Advancements:** Consider whether new technologies or equipment can improve efficiency, productivity, or reduce costs.
- Depreciation and Obsolescence:** Factor in the depreciation of existing assets and the potential for them to become obsolete.
- Budgetary Constraints:** Ensure that any replacement decisions are aligned with the organization's budget and financial goals.
- Maintenance and Repair Costs:** Track maintenance and repair costs to determine if they are becoming excessive and warrant replacement.
- Operational Impacts:** Evaluate the potential impact of asset replacement on daily operations and ensure a smooth transition.
- Legal and Regulatory Requirements:** Adhere to any legal or regulatory requirements related to asset disposal or replacement.

## Asset Repository

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To accurately generate asset condition assessments, inspection schedules, and lifecycle forecasts, the Township requires key inventory fields to be maintained for each asset. These include purchase price, current replacement value, installation date, projected replacement date, and useful life. Maintaining these data elements supports consistent lifecycle modeling and financial forecasting.

Where appropriate, asset inventories have been structured using the UniFormat Level 3 classification system to allow for standardized subcomponent tracking. This approach ensures that building assets are categorized in a consistent manner, including site work, substructure, shell, and interior systems.

Within facilities, inventories are further organized by functional systems such as HVAC, mechanical, electrical, and auxiliary components required to deliver the intended service level.

Useful life estimates are collected in alignment with recognized industry standards, including ASHRAE life expectancy guidelines where applicable, to promote consistency across similar asset types such as pumps, compressors, and mechanical equipment.

Current replacement values are validated using a combination of recent tender pricing, insurance appraisals, and inflation-adjusted purchase costs to ensure reasonable and supportable valuation assumptions.

## Asset Information (Data Governance)

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### Data Maturity and Limitations

The Township's asset management data has been developed from multiple sources and at varying levels of detail, reflecting the staged implementation of asset management practices over time. While significant progress has been made in compiling inventory, condition, and financial information, not all asset records currently contain complete metadata such as installation dates, useful life estimates, replacement costs, or condition ratings.

The Township continues to improve data quality and completeness through ongoing inspections, engineering studies, and the progressive implementation of RFAM and Balance asset management software. As data accuracy improves, future updates to this Asset Management Plan will incorporate refined asset inventories, enhanced lifecycle forecasting, and strengthened financial analysis.

Despite these limitations, the available data is sufficient to identify overall asset condition trends, service risks, and strategic investment priorities. The information presented in this Plan supports informed policy and planning-level decision-making.

To support continuous improvement, the Township relies on and will continue to update the following information sources:

1. A Road Needs Study assessing condition, design class, and road attributes
2. Ontario Structural Inspection Manual (OSIM) biannual bridge inspections

3. Building Condition Assessments (BCA) evaluating facility components, remaining useful life, and lifecycle activities
4. Stormwater network mapping with topology and infrastructure details
5. Replacement cost updates using inflationary CPI adjustments and recent tender pricing
6. Validation of Estimated Useful Life (EUL) and capital financial thresholds
7. Documentation of daily and routine operational activities conducted by Municipal staff

### Asset Tagging

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The Township is implementing a QR barcode fixed asset identification program to improve asset tracking and data management. Where feasible, identification tags are being physically attached to assets in visible and practical locations, with implementation occurring progressively through maintenance activities, inspections, and capital projects.

Asset tagging supports the collection and validation of key data fields such as serial number, make, model, and installation details. As the program continues to expand, this structured identification system will enhance lifecycle tracking, maintenance history documentation, and cost monitoring, enabling more accurate forecasting of renewal needs and capital planning.

## Asset Condition Index

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### Facility Condition Index (FCI)

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The Facility Condition Index (FCI) and Extended Facility Condition Index (EFCI) are tools used to evaluate and compare the overall condition of municipal facilities. The FCI measures the ratio of deferred maintenance and renewal costs to the current replacement value (CRV) of a facility, expressed as a percentage.

A lower FCI indicates that a facility is in relatively good condition, while a higher FCI reflects greater repair and renewal requirements. The FCI provides a standardized benchmark for comparing condition across multiple facilities regardless of size or complexity and assists in identifying assets requiring priority attention.

**Renewal Backlog** represents the estimated cost of all identified repairs, renewals, and upgrades necessary to address existing deficiencies.

**Current Replacement Value (CRV)** represents the estimated cost to replace the entire facility at current market construction rates.

The formula for calculating FCI is:

$$FCI = \left( \frac{\text{Estimated Cost of Repairs and Renewals}}{\text{Current Replacement Value}} \right) \times 100$$

Adopting the FCI approach supports:

- Prioritization of maintenance and renewal projects
- Evidence-based capital budgeting decisions
- Long-term monitoring of facility condition trends
- Objective decision-making regarding renovation, reinvestment, or replacement

Facility inventories are structured using subcomponent classifications (e.g., site work, substructure, shell, interior, HVAC, mechanical, electrical, and auxiliary systems) to ensure that repair and renewal costs are captured at an appropriate level of detail for lifecycle planning.

### Roads Condition Rating System

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The Township utilizes an engineered road condition rating system to assess and manage the condition of its road network. A comprehensive road condition appraisal was completed in October 2021 by qualified engineers using practices consistent with the MTO Methods and Inventory Manual.

Each road section was assigned a condition rating on a 1–10 scale based on surface condition, surface type, drainage characteristics, and overall performance. These ratings form the basis of the [Township's 10-Year Roads Improvement Plan \(2023–2032\)](#), which forecasts deterioration and prioritizes capital improvements.

Condition ratings are adjusted where material maintenance activities occur, including grading, gravelling, calcium application, surface treatments, and rehabilitation work. The Township will commission updated engineered assessments when appropriate to ensure condition data remains current and defensible.

### Bridge Condition Index

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The Township conducts Ontario Structure Inspection Manual (OSIM) inspections on all municipal bridges and culverts every two years, as required under provincial standards. These inspections are performed by qualified professional engineers in accordance with OSIM requirements.

The inspections generate a Bridge Condition Index (BCI) score for each structure, which provides a standardized measure of structural condition. The BCI results, along with detailed inspection findings, identify recommended repairs, maintenance activities, rehabilitation needs, and long-term replacement requirements.

These recommendations are incorporated into the Township's lifecycle planning and capital forecasting to support proactive asset management and ensure continued structural safety and regulatory compliance.

### Fleet Condition Index

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Continue to monitor repairs and maintenance associated to fleet and equipment

### Water Condition Index

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Continue to monitor repairs and maintenance associated to water and equipment assets

### Storm Condition Index

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Continue to monitor repairs and maintenance associated to storm assets such as culverts

### Sanitary Condition Index

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Continue to monitor repairs and maintenance associated to sanitary assets such as force main and manholes.

## Asset Category

As per the O Reg. 58817, Township assets are divided into Core and Non-Core categories.

Core assets include all linear assets such as roads, water, sewer, storm and bridges, while Non-Core assets include facilities, open spaces, fleet and equipment. The Township has begun to, expand non-core assets to include green assets, street and office furniture.

### Core Assets

Hierarchy	Category	Subtype
Transportation	Roads	HCB LCB Gravel
Transportation	Roads	Sidewalks, streetlights
Transportation	Bridges & Culverts	Bridges & Culverts
	Storm & Entrance	Culverts <3 m
	Water	Water mains, Hydrants, Valves
	Sanitary	Sanitary lines, Manholes

### Non-Core Assets

Hierarchy	Category	Subtype
Land (roll number)	Administration Public Works Recreation Environmental Emergency	<ul style="list-style-type: none"> <li>• Easements, Right of ways,</li> <li>• Parking lots</li> <li>• Vacant properties</li> <li>• Cemeteries</li> <li>• Community hall</li> <li>• Fire hall</li> <li>• Library</li> <li>• Sand Dome</li> <li>• Pavilions</li> </ul>
Building Super Structure	Building structure/Outer shell	<ul style="list-style-type: none"> <li>• Interior/exterior</li> <li>• Roof/shell structure/walls</li> <li>• Foundations/footings/slabs</li> </ul>
Building Inventory	Capital assets within building	<ul style="list-style-type: none"> <li>• Electrical</li> <li>• Mechanical</li> <li>• Structural</li> <li>• Emergency</li> </ul>
Fleet/Equipment	<ul style="list-style-type: none"> <li>• Recreational</li> <li>• Emergency</li> <li>• Public works</li> <li>• Environmental</li> </ul>	<ul style="list-style-type: none"> <li>• Heavy duty</li> <li>• Medium duty</li> <li>• Light duty</li> <li>• General equipment</li> </ul>

## Natural Assets

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The Township recognizes natural features such as wetlands, shoreline areas, park spaces, cemeteries, and forested lands as contributing to environmental protection, recreational opportunities, and stormwater management. These features are identified and protected through the Township's Official Plan and Zoning By-law.

The Township's [Tree Canopy By-law](#) further supports the protection and management of natural assets by regulating tree removal and promoting environmental stewardship. This by-law reinforces the Township's commitment to preserving ecological services and enhancing climate resilience. The Tree Canopy By-law is included in Appendix Z.

While natural assets are not currently assigned financial replacement values within the formal asset inventory, they provide important ecological and service functions that support long-term infrastructure sustainability and climate resilience. The Township will continue to consider the role of natural assets as part of its broader climate and land use planning initiatives.

## Unique Assets

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### **Water Tower (Elevated Storage Tank)**

The Township owns and operates the Echo Bay Composite Elevated Tank, which provides potable water storage, system pressure stabilization, and emergency supply capacity.

A comprehensive [Clean, Inspection and Report \(CIR\) was completed on June 15, 2023 by Landmark Municipal Services](#)

The inspection assessed the condition of structural components, safety systems, coatings and linings, and mechanical accessories. The report identified required safety upgrades and recommended rehabilitation of interior and exterior protective coatings.

Following the inspection, the Township completed several priority upgrades, including fall arrest system improvements and safety enhancements. In 2025, the interior coating system was fully removed and replaced in accordance with industry standards and inspection recommendations. Exterior coating rehabilitation was scheduled to coincide with the interior work but has been deferred to 2026 due to contractor scheduling constraints.

The water tower remains a critical asset within the Township's water distribution system and continues to be monitored and maintained in accordance with inspection findings, lifecycle planning, and regulatory requirements.

### **Echo Bay Environmental Centre Raw Water Intake Structure:**

The Township operates a raw water intake structure located in Lake George, which supplies raw water to the Echo Bay Environmental Centre. The intake system consists of a polyethylene intake structure and a 300mm diameter fused HDPE intake pipe extending approximately 1,600 metres to shore.

A comprehensive underwater [Raw Water Intake Pipe & Intake Structure Inspection](#) was completed in July 2025 by qualified professionals, with findings summarized in a September 12, 2025 memorandum prepared by Kresin Engineering Corporation

The inspection assessed the intake structure, ballast system, chlorine line conduit, and exposed intake pipe condition.

The inspection concluded that the intake pipe is in good condition with no evidence of pipe wall failure or compromised fused joints. The intake structure was found to be in fair condition, with minor deficiencies including missing fasteners, a loose cover panel, a misaligned concrete ballast, and localized chlorine conduit support issues. Recommended corrective actions have been identified to address these items and maintain long-term asset integrity.

As a critical component of the Township's water supply system, the raw water intake structure is monitored through periodic inspection and incorporated into lifecycle planning and capital forecasting processes to ensure continued operational reliability.

## Data Collection Framework

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The Township maintains asset data using structured classification systems and digital platforms to support consistent inventory management, condition tracking, and lifecycle planning.

### Land Related Assets (GIS Integration)

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The Township utilizes Geographic Information System (GIS) mapping tools, in coordination with the Planning Board, to support visualization and analysis of land-related assets and parcel-based service delivery. GIS mapping enables the Township to integrate parcel information with infrastructure, planning, and service data to support informed asset management and growth planning.

Through GIS analysis, the Township can assess and monitor:

- Total number of parcels within municipal boundaries
- Parcels connected to municipal water and/or sanitary infrastructure
- Parcels with emergency service access within established response parameters
- Parcels located within approved hydrant coverage distance
- Parcels serviced by maintained municipal roads

The continued enhancement of GIS mapping and field-verified asset data supports improved infrastructure planning, service level analysis, and long-term capital forecasting.

### Non-Core Asset Data Structure (Facilities)

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For building and facility assets, the Township utilizes the ASTM UNIFORMAT II Level 3 classification standard (E1557) to organize building component data. This standardized approach ensures consistent tracking of subcomponents such as site work, substructure, shell, interiors, mechanical, electrical, and auxiliary systems.

Facility inventory data is maintained using RFAM, accessible through Ontario Recreation Facilities Association (ORFA) membership, and supports condition assessment and lifecycle planning.

### Core Infrastructure Data Structure

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Core infrastructure asset data (roads, bridges, water, wastewater, and culverts) is maintained within the Township's asset management software platform (Balance). Inventory collection follows structured asset categorization to support condition analysis, lifecycle forecasting, and financial planning in alignment with Ontario Regulation 588/17 requirements.

## Asset Breakdown

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## Non-core Assets

Asset category	Asset Categories	Asset Attributes
Land	Administration, Green space, Public Works	Roll Number
Buildings	Envelope Foundations Roof	Uniformat II
Building Inventory	Plumbing HVAC Electrical	Make, model, serial #, dates
Fleet	Heavy duty Medium duty Light duty	Make, model, vin #, dates
Equipment	Recreation, Emergency, Public Works	Make, model, dates

## Core Assets

Asset category	Asset Categories	Asset Attributes
Transportation	Roads	Class, PCI, underground utilities
	Bridges	BCI, load posting, GIS Location
Storm	Culverts <3m	Size, length, material, location
Water	Water wells	Size, length, material, location
	Water mains	Size, length, material, location
	Valves	Size, length, material, location
	Hydrants	Size, length, material, location
Sanitary	Manholes	Size, length, material, location

## Bridges/Culverts

The following chart describes the financial requirements for the continued maintenance of bridges. The values were derived from [2024 Biennial Bridge & Culvert OSIM Report](#).

Fig. 1 Bridges

ASSET SUB TYPE	ASSET CODE	ASSET NAME	SURFACE TYPE	AREA(m2)	REPLACE... YEAR	PURCHASE PRICE	LIFECYCLE COST	REPLACE... COST	CONDITI... RATING
bri									
Bridge	BRIDGE ST...	ECHO LAKE ROAD	Others	131.76	2010	\$72,429.00	\$3,000.00	\$1,500,000.00	49
Bridge	BRIDGE ST...	RITTER BRIDGE	Others	93	2064	\$649,350.00	\$82,000.00	\$3,250,000.00	74
Bridge	BRIDGE ST...	BAR RIVER BRIDGE (Village)	Others	177.45	2020	\$85,514.00	\$51,000.00	\$5,250,000.00	56
Bridge	BRIDGE ST...	MUDDY CREEK BRIDGE	Others	58.28	2056	\$36,392.00	\$147,500.00	\$650,000.00	63
Bridge	BRIDGE ST...	JARREL BRIDGE (Alton)	Others	24.01	2050	\$56,439.00	\$55,000.00	\$750,000.00	66
Bridge	BRIDGE ST...	TUIRA BRIDGE (CULVERT)	Others	141.7	2070	\$752,680.00	\$14,500.00	\$850,000.00	76
Bridge	BRIDGE ST...	WELLER BRIDGE (CULVERT)	Others	63.22	2070	\$586,482.00	\$11,500.00	\$850,000.00	0

Fig. 2 Culverts >3m

ASSET SUB TYPE	ASSET CODE	ASSET NAME	SURFACE TYPE	AREA(m2)	REPLACE... YEAR	PURCHASE PRICE	LIFECYCLE COST	REPLACE... COST	CONDITI... RATING
>3									
Culvert >3m	BRIDGE_ST...	ROBERTS CREEK (CULVERT)	other	63.8	2058	\$429,030.00	\$5,000.00	\$2,500,000.00	74
Culvert >3m	CLV_335_01	CLV_335_01	other	54000					0
Culvert >3m	CLV_285_0...	CLV_285_01_03	other	43200					0

Estimated Replacement cost from biennial bridge inspection report conducted in 2024

**2024 OSIM Bridge and Culvert Inspections - Township of Macdonald, Meredith and Aberdeen Additional Replacement Cost Estimate (2024 dollars)**

<b>Structure</b>	<b>Description</b>	<b>Estimated Replacement Cost</b>
Roberts Creek Culvert	Structural Plate CSP Arch - Open bottom on concrete foundations. 5.8m span Concrete headwalls, gabion wing walls.	\$2,500,000
Bar River Bridge	Timber bridge with concrete deck top. Triple span with total length of 19.5m. Timber abutments and timber piles.	\$5,250,000
Echo Lake Road Bridge	Timber bridge with concrete deck top Four-span with total length of 18.5m. Timber abutments and timber piles.	\$3,750,000
Jarrel Bridge	Timber bridge with wood deck Single 5m span.	\$750,000
Muddy Creek Bridge	Pre-fabricated modular steel bridge on timber bridge. 12.5m total length. Timber abutments and timber piles.	\$650,000
Ritter Bridge	Pre-fabricated modular steel bridge. 15.5m span. Concrete abutments.	\$3,250,000
Tuira Bridge	Structural Plate CSP Arch - Open bottom on concrete foundations. 8m span. Concrete headwalls.	\$850,000
Weller Bridge	Structural Plate CSP Arch - Open bottom on concrete foundations. 6m span. Concrete headwalls.	\$850,000

**The 2024 Biennial inspections report the following findings and recommendations:**

Table 1: Notable Findings and Recommendations	
Structure	Remarks
Roberts Creek Culvert McCarrel Lake Road, 0.1km North of Watson Road East Steel Arch Culvert	Overall, the culvert is in good condition requiring only routine maintenance of roadside vegetation.
Bar River Bridge Bar River Road, 0.2km East of Fords Road/Lapish Road Three span Laminated Lumber Bridge	The structure is aged and nearing the end of its serviceable life. Plan for major rehabilitation or replacement in the next 6-10 years.
Echo Lake Road Bridge Echo Lake Road, 40m North of Birch Lake Road Quad span Timber/Concrete Stringer Bridge	This structure is aged and nearing the end of its serviceable life. We understand that planning for replacement is underway.
Jarrel Bridge Watson Road, 0.1km East of McCarrel Lake Road Timber Beam Bridge	Overall, the structure appears in fair to poor condition; elements are showing their age and rehabilitation will be required in the next 1-5 years.  Signage improvements and minor maintenance is recommended in the near term.
Muddy Creek Bridge Iron River Road, 2.7km from Birch Lake Road Steel Modular Bridge	This structure appears in fair condition. Some elements are in need of rehabilitation, such as abutment walls.  Recommend that the installation of the pre-fabricated bridge be reviewed for municipal standards compliance, i.e. guide rails, foundation conditions, etc.
Ritter Bridge Cemetery Road, 0.6km South of Watson Road East Steel Modular Bridge	Structure appears to be in fair condition, however corrosion of structural steel is noted.  Recommended to budget for repainting of the structural steel in the next 5 years.
Tuira Bridge Watson Road, 650m East of Cemetery Road Steel Arch Culvert	Structure is in excellent condition.
Weller Bridge Watson Road East, 850m East of Cemetery Road Steel Arch Culvert	Structure is in excellent condition.

## Culverts <3 m

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## Cross Culverts

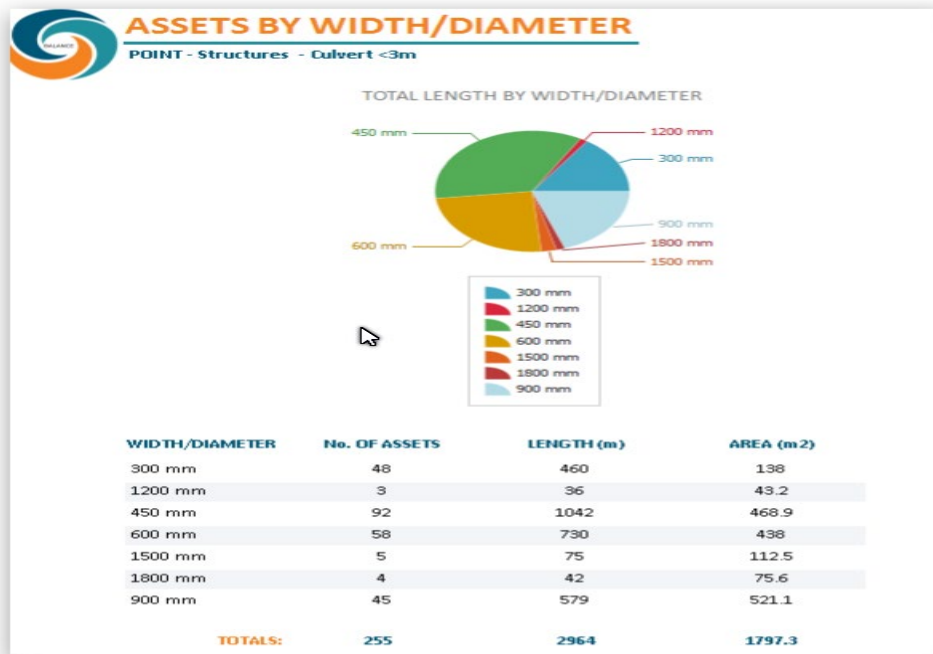
The Township has collected an inventory of all their cross culverts <3m.

To date the cross-culvert inventory contains 255 culverts for an approximate replacement value of \$1,144,250.00.

The replacement cost is calculated based on the individual asset diameter and length.

### Replacement Value

Asset Category	Cost	Length	Total	Average PCI
Culvert < 3m	\$ 300 – \$1,500 /m	2,946 m	\$1,144,250	Fair, trending toward good.



## Entrance Culverts:

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The Township has completed an inventory of entrance culverts located at private access points along municipal roads. A total of 398 entrance culverts have been identified with an estimated combined replacement value of \$251,957.86.

Replacement values are calculated based on culvert diameter and length using standardized unit cost assumptions consistent with the Township's culvert valuation methodology.

Based on condition assessments, the majority of entrance culverts are in good or very good condition:

- **Very Poor: 4 (1%)**
- **Poor: 6 (2%)**
- **Fair: 37 (9%)**
- **Good: 225 (57%)**
- **Very Good: 126 (32%)**

In accordance with the Township's [Culvert Installation & Maintenance Policy \(2021\)](#), the Road Superintendent determines the lifespan and expiry of entrance culverts. Where a culvert is determined to have reached the end of its useful life, the Township replaces the culvert at no cost to the property owner

As such, maintaining an accurate inventory and valuation of entrance culverts is essential for lifecycle planning and long-term capital forecasting.

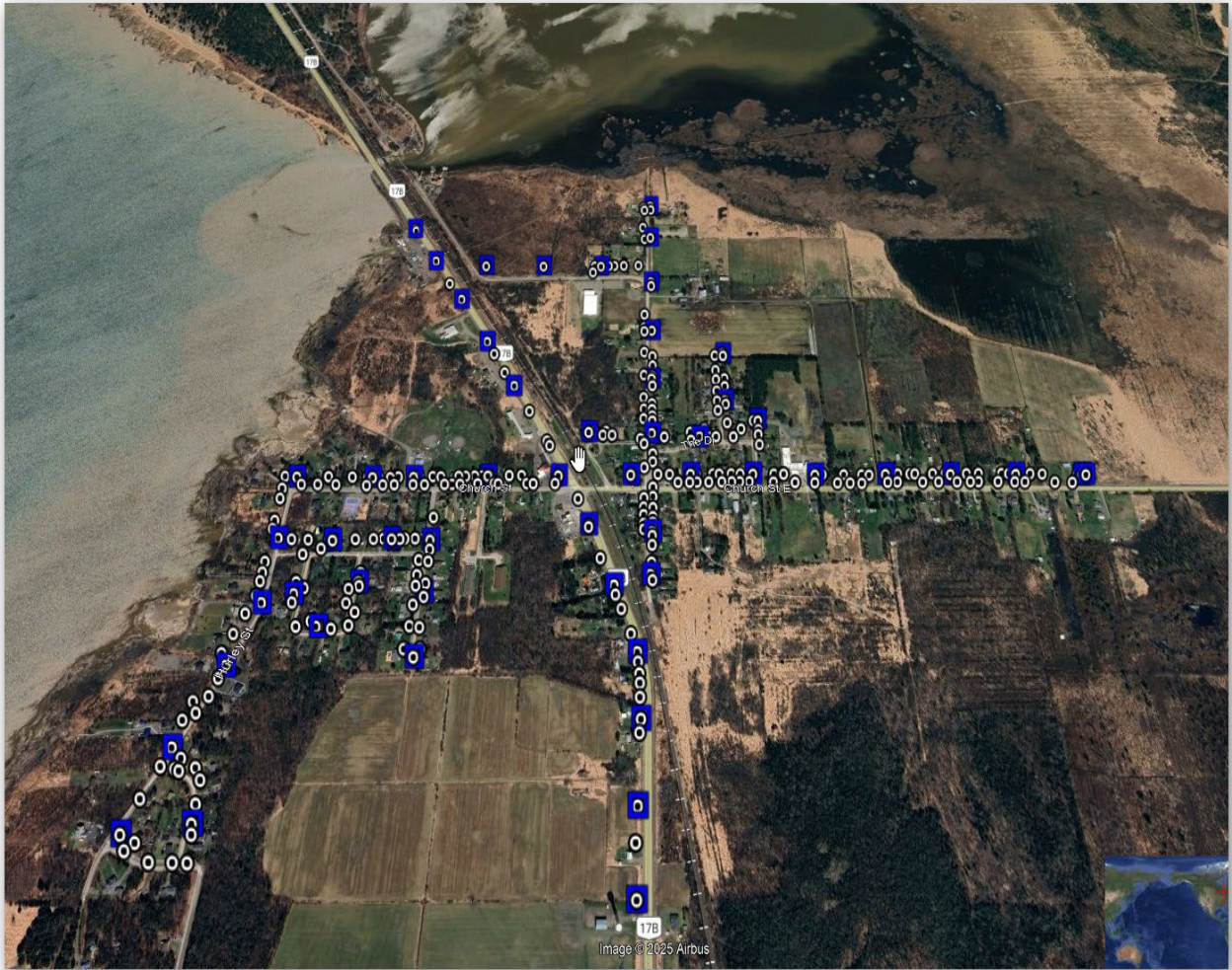
Continued monitoring and condition tracking will support proactive replacement scheduling and drainage performance management.

## Water

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### Replacement Value

Asset Category	Cost	Quantity	Replacement value	Lifecycle cost	Average PCI
<b>Waterline</b>					
50 mm	\$500 / m	400 m	\$ 20,000	Replace	Fair
150 mm	\$650 / m	3892 m	\$2,179,520	Replace	Fair
200 mm	\$650 / m	1707 m	\$1,109,550	Replace	Fair
250	\$650 / m	2699 m	\$1,754,350	Replace	Fair
Water valve	\$ 2,500.00 each	48	\$ 120,000	Replace	Good
Hydrants	\$ 10,000 each	52	\$ 52,000	Replace	Good



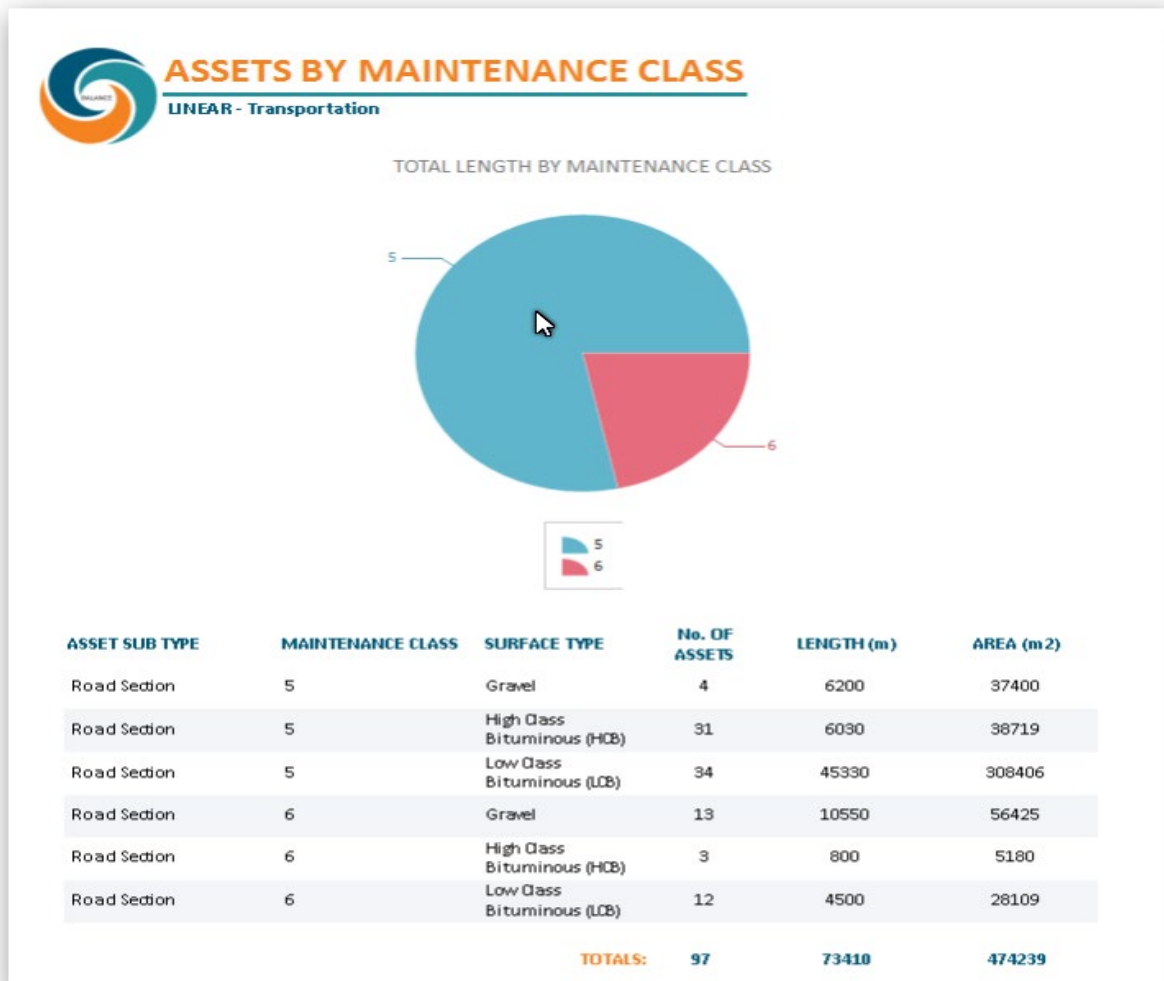
In addition to linear water infrastructure, the Township maintains treated water storage facilities, including the Clear Well Reservoir. A comprehensive inspection was completed in 2025 to assess structural integrity, coating condition, and operational components. Findings from the inspection have been incorporated into lifecycle planning and capital forecasting. The full [2025 Clear Well Reservoir Inspection Report](#) is included in [Appendix R](#).

## Transportation

The Township road inventory consists of 7.09 Km of HCB, 49.830 Km of LCB and 16.750 Km of gravel.

### Replacement value

Asset Category	Cost	Quantity	Replacement value	Average PCI
Gravel	\$ 30.00 m2	93,825 m2	\$2,814,750.00	Good
HCB	\$150.00 m2	45,199 m2	\$6,799,850.00	Good
LCB	\$ 50.00 m2	33,6515 m2	\$16,825,750.00	Good
Streetlights	\$3000.00 each	81	\$243,000.00	Good





## Replacement Value

Asset Category	Cost	Quantity	Replacement Value	Lifecycle Cost	Average PCI
Sanitary line	\$500 -1,500 m	8,736 m	\$7,026,729	Replace	Good
Manhole	\$ 2,500 – 3,000 each	84	\$ 252,000.00	Replace	Good

## Sewer Network



## Water and Wastewater – 10-Year Capital Forecast

The Township’s [Drinking Water System Financial Plan \(2025\)](#), prepared in accordance with O. Reg. 453/07, supports long-term financial sustainability of the municipal drinking water system.

The Township’s contracted operator, OCWA, provides a rolling 10-year capital tracker identifying anticipated major maintenance, rehabilitation, and asset replacement requirements for water and wastewater infrastructure.

The capital tracker includes projected renewal activities, estimated costs, and anticipated timing to support lifecycle planning and long-term financial forecasting. This forecast is reviewed annually and informs the Township’s capital budgeting process.

The most current OCWA 10-Year Capital Tracker is shown below:

Ref.	No.	Scope of Work Recommended Capital (new equipment)	Cost Estimate									
			2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	<b>Echo Bay Water Treatment Plant</b>											
	1	SCADA system Replacement	\$50,000									\$50,000
	2	HLP Replacement Treated Water	\$35,000	\$35,000				\$12,000				
	3	Raw Water Control Valve on Filters	\$4,500	\$4,500		\$4,500		\$4,500		\$4,500		\$4,500
	4	Clean and Re-passivate Filter and GAC Tanks		\$120,000								
	5	Replace Filter and GAC Media				\$170,000						
	6	Treated Water Flow Meter Replacement	\$9,500									
	7	GAC Pump Well Access Hatch Replacements	\$25,000									
	8	Replace Lab Spectrophotometer	\$10,000									
	9	GAC Pump Replacements		\$10,000				\$10,000				
	10	Clear Well Inspections (OCWA ROV)				\$2,500		\$2,500			\$2,500	
	11	Generator Transfer Switch (obsolete)	\$30,000									
	12	Sodium Hydroxide Chemical Panel Replacement	\$20,000									\$20,000
	<b>Total Estimate - Recommended Capital</b>		<b>\$184,000</b>	<b>\$169,500</b>	<b>\$2,500</b>	<b>\$174,500</b>	<b>\$0</b>	<b>\$29,000</b>	<b>\$0</b>	<b>\$4,500</b>	<b>\$2,500</b>	<b>\$74,500</b>
	<b>Echo Bay WTP- Maintenance Capital (repairs, etc)</b>											
	1	Chlorine Analyzer Probe Replacement 5yr cycle	\$5,000					\$5,000				
	2	PH Probe Replacement 4 yr cycle	\$1,500			\$1,500		\$1,500		\$1,500		\$1,600
	3	Lab Equipment as Required	\$2,500		\$2,500		\$2,500		\$2,500		\$2,500	
	4	Chemical Systems Parts, eg. valves, sensors, PRVs	\$2,000	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,600	\$2,600	\$2,600	\$2,600
	5	Generator Batteries/ Repairs as Required	\$1,000	\$900	\$900	\$900	\$900	\$950	\$950	\$950	\$950	\$950
	6	UPS batteries as Required	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800
	7	Misc Building Repairs	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500
	8	DWQMS. Onsite Audit (3year rotation)		\$4,500			\$4,500		\$4,500			
	9	DWQMS Offsite Audit (annually)	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500
	10	PTTW renewal (10 year rotation)			\$1,000							
	11	MDWL, MDWP Renewal (5 year rotation)					\$1,000					
	12	UV Sensor										
	<b>Total Estimate - Recommended Maintenance Capital</b>		<b>\$15,800</b>	<b>\$11,700</b>	<b>\$10,700</b>	<b>\$8,700</b>	<b>\$15,200</b>	<b>\$13,750</b>	<b>\$9,850</b>	<b>\$13,350</b>	<b>\$9,850</b>	<b>\$8,950</b>
	<b>Echo Bay WTP- Maintenance Capital (repairs, etc)</b>											
	1	Chlorine Analyzer Probe Replacement 5yr cycle	\$5,000					\$5,000				
	2	PH Probe Replacement 4 yr cycle	\$1,500			\$1,500		\$1,500		\$1,500		\$1,600
	3	Lab Equipment as Required	\$2,500		\$2,500		\$2,500		\$2,500		\$2,500	
	4	Chemical Systems Parts, eg. valves, sensors, PRVs	\$2,000	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,600	\$2,600	\$2,600	\$2,600
	5	Generator Batteries/ Repairs as Required	\$1,000	\$900	\$900	\$900	\$900	\$950	\$950	\$950	\$950	\$950
	6	UPS batteries as Required	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800
	7	Misc Building Repairs	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500
	8	DWQMS. Onsite Audit (3year rotation)		\$4,500			\$4,500		\$4,500			
	9	DWQMS Offsite Audit (annually)	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500
	10	PTTW renewal (10 year rotation)			\$1,000							
	11	MDWL, MDWP Renewal (5 year rotation)					\$1,000					
	12	UV Sensor										
	<b>Total Estimate - Recommended Maintenance Capital</b>		<b>\$15,800</b>	<b>\$11,700</b>	<b>\$10,700</b>	<b>\$8,700</b>	<b>\$15,200</b>	<b>\$13,750</b>	<b>\$9,850</b>	<b>\$13,350</b>	<b>\$9,850</b>	<b>\$8,950</b>

Echo Bay WWTF - Recommended Capital											
1	Environmental SPS Failed Pump	\$12,000									
2	Washdown System for plant (currently no means to hose Clarifiers/ Troughs/etc.	\$30,000									
3	Clarifier Airlift pump Systems Rehab	\$20,000	\$20,000								
4	Blower Replacements		\$25,000			\$25,000			\$25,000		
5	Chemical panel board with pumps - maintenance	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	
6	Ongoing pump replacements		\$12,000		\$12,000		\$12,000		\$12,000	\$12,000	
7	RBC Chemical pump Panel replacements	\$25,000		\$25,000							
8	Composite Sampler Replacements X2	\$50,000									
Total Estimate - Recommended Capital		\$137,500	\$57,500	\$25,500	\$12,500	\$25,500	\$12,500	\$500	\$37,500	\$500	\$12,500
Echo Bay WWTF - Recommended Maintenance Capital											
1	Chemical Systems Parts, eg. valves, sensors, PRVs	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	
2	Church St SPS cleaning	\$5,000									
3	Collection system flushing (1/3 for 3 years)	\$6,000	\$6,000		\$6,000	\$6,000	\$6,000		\$6,000	\$6,000	
Total Estimate - Recommended Maintenance Capital		\$12,000	\$7,000	\$1,000	\$7,000	\$7,000	\$7,000	\$1,000	\$7,000	\$7,000	
Tower/Distribution/Storage and Collection/Lagoon											
1	Water Tower Clean/inspect/Report					\$15,000				\$15,000	
2	Water Main Swabbing (OCWA) One week		\$20,000								
3	Hydrant Repairs as needed	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	
Total Estimate - Recommended Capital		\$2,000	\$22,000	\$2,000	\$2,000	\$17,000	\$2,000	\$2,000	\$2,000	\$2,000	
Total Capital Estimate		\$351,300	\$267,700	\$41,700	\$204,700	\$64,700	\$64,250	\$13,350	\$64,350	\$21,850	\$119,950

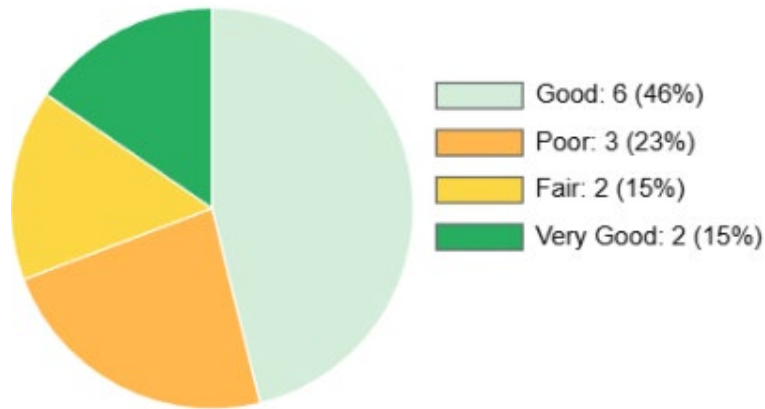
## Fleet

Below is a list of Township owned fleet with an estimated replacement cost of **\$3,444,689.00**

### Replacement Value

Department	Name	Replacement Cost	Proposed Replacement Date	Condition	Lifespan
Public Works	2012 Freightliner Plowtruck	\$400,000.00	1/1/2022	Poor (20-40% Remaining)	10
Public Works	2017 Red Chev Silverado #17-5	\$60,000.00	1/1/2024	Poor (20-40% Remaining)	7
Public Works	2018 CAT BACKHOE	\$229,470.00	1/1/2038	Good (60-80% Remaining)	20
Public Works	2019 CAT DOZER	\$251,538.00	1/1/2034	Good (60-80% Remaining)	15
Public Works	2021 Freightliner Plowtruck	\$400,000.00	1/1/2031	Fair (40-60% Remaining)	10
Public Works	2023 Black Chev #23-6	\$60,000.00	1/1/2030	Good (60-80% Remaining)	7
Public Works	2088 CAT 16M GRADER	\$458,940.00	1/1/2028	Good (60-80% Remaining)	20
Public Works	KIOTI 6620 POWER SHUTTLE	\$114,741.00	9/1/2040	Very Good (80-100% Remaining)	20
Emergency	2006 PUMPER TRUCK EF#10	\$835,000.00	1/1/2026	Poor (20-40% Remaining)	20
Emergency	Command / Supply Truck EF#13	\$60,000.00	1/1/2037	Good (60-80% Remaining)	20
Emergency	Rescue Truck E/F-#12	\$250,000.00	1/1/2035	Good (60-80% Remaining)	20
Emergency	TANKER E/F-#11	\$270,000.00	1/1/2030	Fair (40-60% Remaining)	20
Parks & Recreation	2024 Black Toyota Tacoma	\$55,000.00	1/1/2031	Very Good (80-100% Remaining)	7
<b>Total Replacement</b>		<b>\$3,444,689.00</b>			

## Condition Distribution



### Fire Department

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The Echo Bay Volunteer Fire Department was formed in 1962 and chartered by Council in 1963. The Township of Macdonald, Meredith & Aberdeen Additional is served by a dedicated complement of twenty-one volunteer firefighters who provide fire protection services to the community.

The Fire Department participates in the Ontario Mutual Aid program and operates under a fire services agreement to provide a full range of fire-related services, including fire suppression, motor vehicle collision response, and other emergency response activities across the Township.

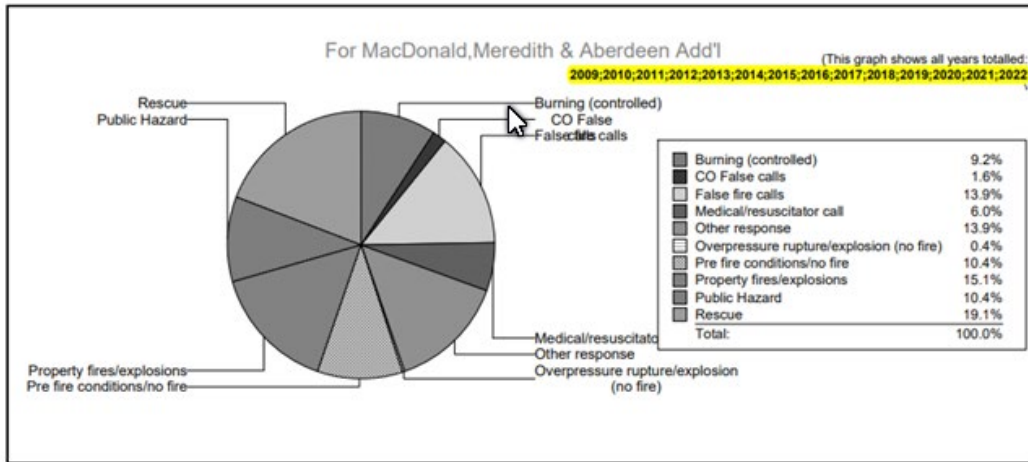
A [Community Risk Assessment](#) completed in 2024 identified the Township's large geographic area as a key risk factor, with many properties located at significant distances from the fire station, resulting in increased response times. In addition, only a portion of the Township is serviced by municipal water and sewer infrastructure, meaning that fire hydrant coverage is limited to a small area. These factors are important considerations in asset management planning, emergency preparedness, and the prioritization of fire-related infrastructure and facilities.

**Municipal Emergency Calls by Response Type Class**



Notes: Civilian and Fire Fighter injuries are reported for fires. Non fire injuries are reported for Fire Fighters only. 0% indicates that the % is less than 1.  
 Loss fires: are defined as fires where an injury, or fatality or \$ loss damage is reported.  
 Nonloss fires: are fires with \$0 loss damage and 0 injury and 0 fatality reported.  
 Nonloss fire EXCLUDED: (OFM response code 3) fires occurring outdoors only with \$0 loss and 0 injury/fatality that did NOT occur in dump/recycling and NOT caused by arson, vandalism or children playing.  
 CO emergency calls: Prior to 2009 "false CO alarms" and "CO present alarms" were not reported separately. From 2009 onwards these are reported separately.

Municipality: **MacDonald, Meredith & Aberdeen Add'l**



**Municipal Fires: Overview Property Class, Injuries, Cause, Ignition source**



MacDonald, Meredith & Aberdeen Add'l

Selected years: 2009,2010,2011,2012,2013,2014,2015,2016,2017,2018,2019,2020,2021,2022

Tables 2 to 5 report on STRUCTURE FIRES only, see Table 1 for the number of vehicle and outdoor fires.

24-May-2024  
Page: 1

Summary: Total Emergency calls (fires and non fire calls), including Vehicle fires

	Total	A. Loss Fire Structure	B. Loss Fire Other	C. Loss Fire Vehicle	D. No loss Fire	E. No loss Fire EXCLUDED	F. Non fire call
2011	26	0	0	0	1	0	25
2012	27	0	0	0	3	1	23
2013	16	1	0	0	2	0	13
2014	18	0	0	0	0	0	18
2015	28	6	0	1	0	3	18
2016	19	0	0	0	0	0	19
2017	21	0	0	0	0	0	21
2018	20	1	0	1	1	1	16
2019	11	0	1	0	0	4	6
2020	18	1	0	0	0	3	14
2021	27	1	0	2	0	1	23
2022	20	1	0	0	1	1	17

## Facilities

The Township owns the following facilities.

Category	Sub Category	Replacement Value	Condition
Environmental	Pump Stations		Fair - Good
	Landfill Attendant Building	\$ 387,065.00	Poor - Fair
	Stand pipe (Water Tower)	\$4,184,275.00	Fair - Good
Environmental Centre		\$7,319,970.00	
	Water treatment facility		Fair - Good
	Waste water treatment facility		Fair - Good

Category	Sub Category	Replacement Value	Condition
Recreation	Sportsplex - Arena	\$6,609,550.00	Fair - Good
	Echo Bay Community Hall	\$1,287,775.00	Very Poor - Poor
	Sylvan Valley Community Hall	\$ 950,000.00	Very Poor - Poor
	Milligan Gazebo	\$ 358,800.00	Fair - Good
	Tower Lake Cabin	\$ 153,882.68	Poor - Fair
	Old Museum/Jail	\$ 194,707.60	Very Poor

Category	Sub Category	Replacement Value	Condition
Administration	Municipal Office	\$ 928,394.00	Fair - Good
	Museum/Lending Library	\$1,027,795.00	Fair - Good
	Cemetery Vault	\$ 12,562.29	Poor

Category	Sub Category	Replacement Value	Condition
Emergency	Fire Hall	\$1,402,365	Good

Category	Sub Category	Replacement Value	Condition
Public Works	Municipal Garage	\$1,925,000.00	Good
	Sand Dome	\$ 618,192.00	Very good

## Facility Condition Index

The Township completed a Building Condition Assessment (BCA), which produced a Facility Condition Index (FCI) score for each municipal facility. The FCI is a standardized metric that compares the estimated cost of required repairs and renewals to the current replacement value of a facility.

The Township uses the FCI to identify facilities with higher immediate and near-term capital needs and to establish a consistent, comparative methodology across all facilities, regardless of size, age, or function. Higher FCI scores indicate a greater proportion of renewal and replacement requirements relative to the facility's replacement value.

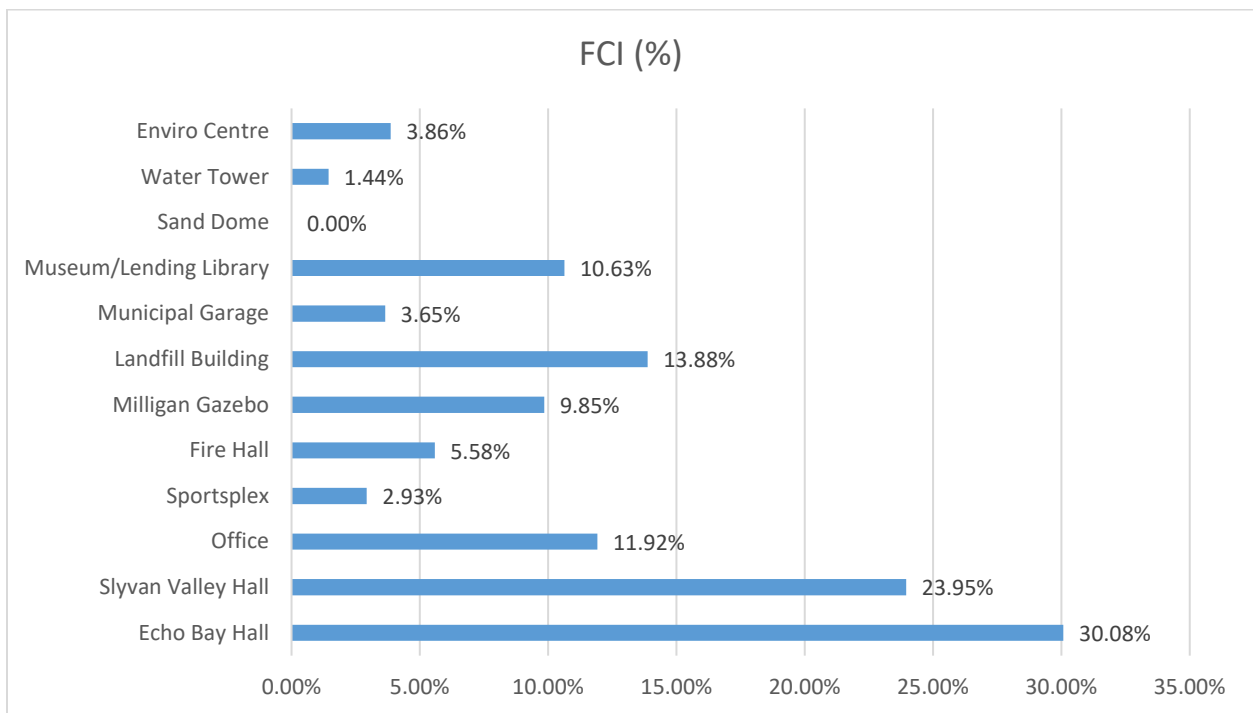
All Township facilities included in this assessment have an assigned FCI score and are reflected in the accompanying bar graph. The results are presented alongside **industry benchmark ranges**, which are commonly used in municipal asset management to contextualize facility condition and relative risk.

By comparing Township facilities against these benchmarks, Council and staff are better able to understand how local facilities perform relative to generally accepted industry standards, prioritize reinvestment, and inform long-term capital planning and budget forecasting.

FCI Benchmarks by Industry				
Sector	Good (<5%)	Fair (5-10%)	Poor (>10%)	Notes
K-12 Schools	< 0.05	0.05 - 0.10	> 0.10	APPA/CEFPI standards
Higher Education	< 0.05	0.05 - 0.10	> 0.10	APPA guidelines
Healthcare	< 0.03	0.03 - 0.05	> 0.05	Stricter due to patient safety
Municipalities	< 0.05	0.05 - 0.10	> 0.10	FCM/provincial standards
Commercial Property	< 0.05	0.05 - 0.15	> 0.15	Varies by asset class/tenant

*Healthcare facilities typically require stricter FCI targets due to patient safety regulations and accreditation requirements.*

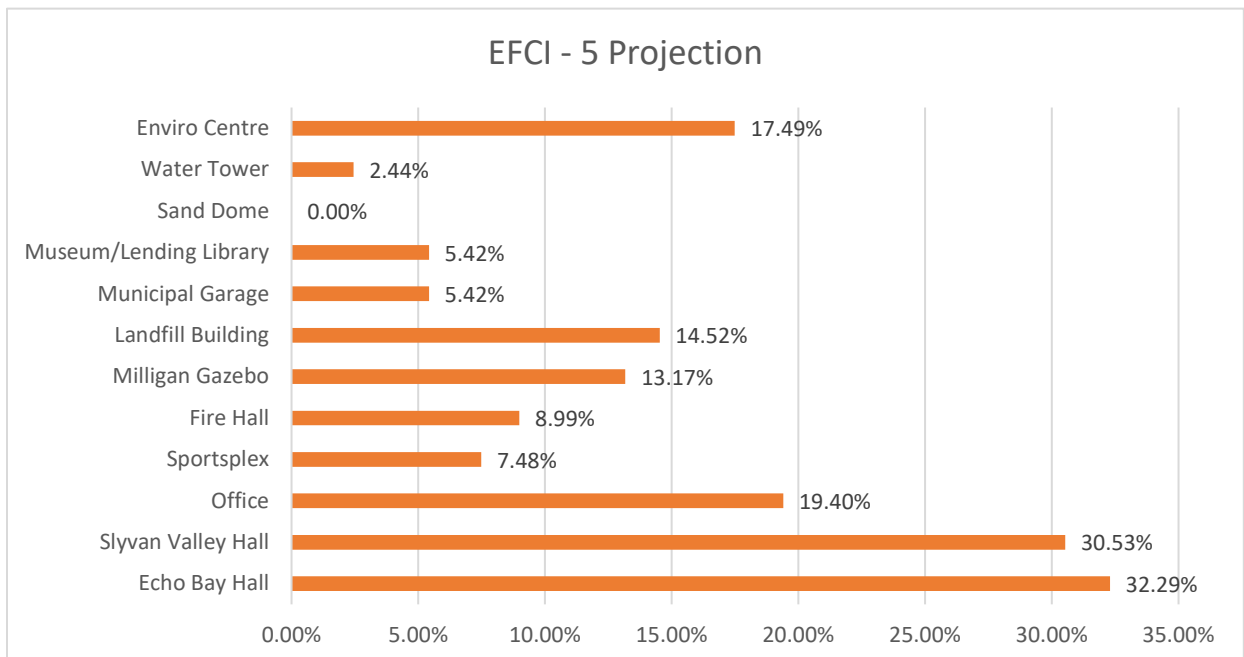
## Building Condition Assessment to Present FCI Scores:

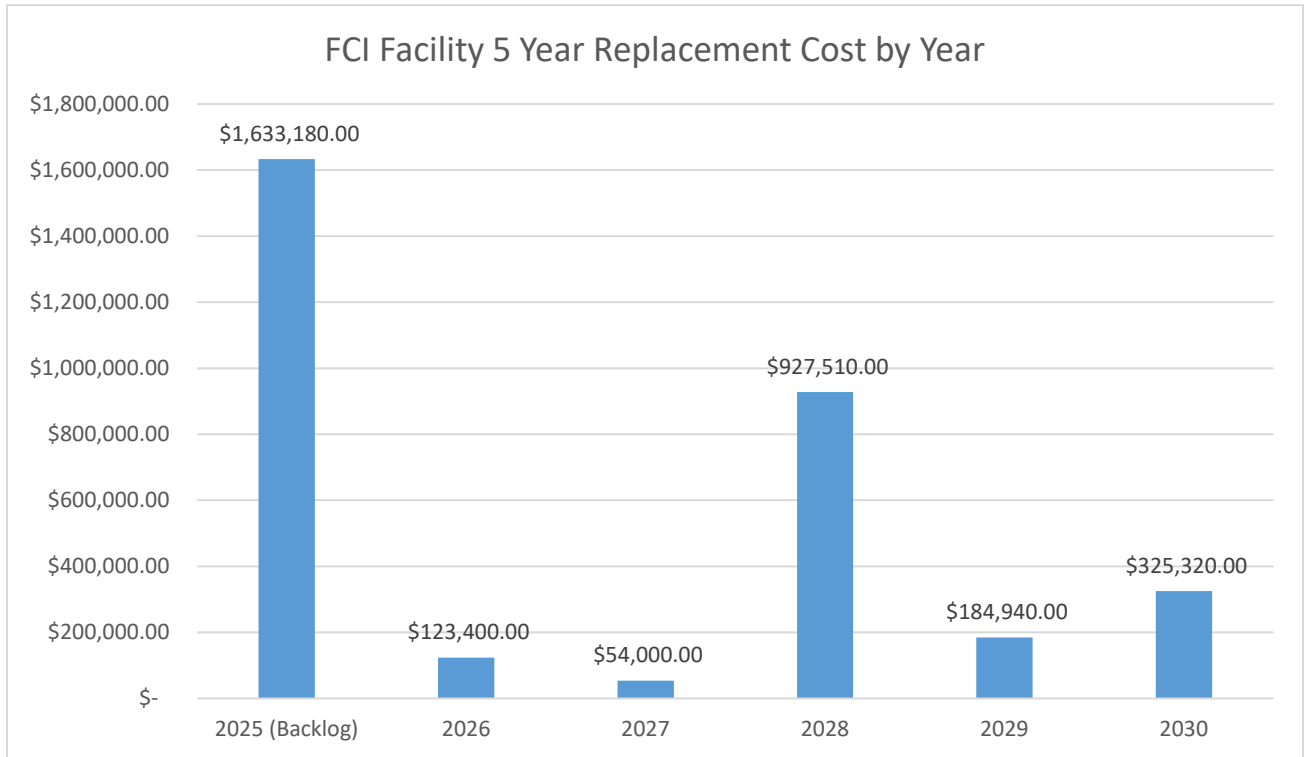


## EFCI Cost Analysis

Extended Facility Condition Index reflects the total replacement value over the next 5 years.

Disclaimer: The information provided is intended to serve as useful indicators and trend insights. It should not be interpreted as exact financial facts or definitive advice.





### Sportsplex – Structural Review

We had Kresin Engineering Corporation complete a [Sportsplex Structural Review](#) on September 16, 2025.

The review focused on the pre-engineered metal building (PEMB) structure enclosing the ice pad area and was undertaken in response to recommendations identified in a previous Building Condition Assessment.

The review concluded that the PEMB structure is in **Good to Excellent condition**, with no evidence of structural deformation or deflection. Minor surface corrosion was observed on structural steel members, particularly at frame locations where moisture exposure occurs, and inconsistent paint coverage was noted in some areas.

Recommendations included redirecting roof drainage away from foundations, removing abandoned ventilation components, avoiding welded structural attachments where possible, and planning for repainting of structural steel within the next 2–5 years as a preventative corrosion management measure.

A preliminary budget estimate of approximately \$200,000 was identified for the repainting work.

The Township will incorporate these findings into its facility lifecycle planning and capital forecasting to ensure continued structural integrity and long-term serviceability of the Sportsplex.

### **Environmental Centre – Water and Wastewater Condition Overview**

In November 2024, Kresin Engineering Corporation completed a comprehensive [Environmental Centre Condition Overview](#) for the Township’s Water Treatment Plant (WTP) and Sewage Treatment Plant (STP). This review was undertaken in addition to the Building Condition Assessment and evaluated both physical asset condition and operational performance in relation to regulatory requirements and industry best practices.

The review identified a series of renewal and maintenance priorities for both facilities, supported by order-of-magnitude cost estimates and suggested implementation timelines to guide lifecycle planning and capital budgeting. The full engineering report is included in Appendix X of this Asset Management Plan.

Since completion of the report, the Township has advanced or completed the majority of identified priority items and incorporated the remaining recommendations into upcoming budget cycles and multi-year capital planning. Ongoing renewal and replacement activities are being prioritized based on operational risk, regulatory compliance, and asset criticality.

The Environmental Centre remains in overall good condition and continues to operate in compliance with applicable MECP requirements. Findings from the review have been integrated into the Township’s asset management framework to support long-term infrastructure sustainability and service reliability.

**Table 10.1: Summary of Recommendations - WTP**

Recommendation	Cost Estimate	Priority (Years from 2025)
1. Inspection of Intake and intake pipe.	\$12,500	1-2 years
2. Install new raw water pump.	\$2,500	When needed
3. Continue to monitor pump and valve functionality (raw and high lift).	\$0.00	Ongoing
4. Clean and re-passivate filter and GAC tanks.	\$120,000	3-5 years
5. Replace flocc recirculators.	\$30,000	1 year
6. Review alternative coagulants and flocculants.	\$15,000	1 year
7. Replace filter and GAC media.	\$170,000	2-3 years
8. Renew online analytical equipment.	\$25,000	Annually (for 3 yrs)
9. Inspect reservoirs and pump wells.	\$7,500	1-2 years
10. Continue to exercise reservoir sluice gates.	\$0.00	Ongoing
11. Replace GAC pump well access hatch.	\$25,000	1-2 years
12. Replace two high lift pumps.	\$25,000	1 year
13. Replace SCADA HMI computer.	\$10,000	1 year
14. Replace laboratory water quality meter.	\$10,000	2-3 years

**Table 10.2: Summary of Recommendations - STP**

Recommendation	Cost Estimate	Priority
1. Develop and implement grit and screenings management procedure (OCWA).	\$0.00	1 year
2. Remove vegetation and clean scum from primary clarifiers.	\$0.00	Ongoing
3. Rehabilitate primary clarifier scum air lift systems.	\$35,000	1-2 years

**Table 10.2: Summary of Recommendations - STP**

Recommendation	Cost Estimate	Priority
4. Remove RBC covers, inspect media packs and shaft, replace media packs as needed.*	\$25,000	1 year
5. Replace secondary clarifier insulated covers.	\$60,000	2-3 years
6. Remove vegetation and clean scum from secondary clarifiers.	\$0.00	Ongoing
7. Assess and rehabilitate secondary clarifier scum air lift systems.	\$40,000	2-3 years
8. Verify functionality of UV system.	\$0.00	Ongoing
9. Replace septic and lime tank mixers (x3).	\$55,000	1-2 years
10. Process pump replacements.	\$15,000	Annually (for 5 yrs)
11. Replace odour control units (x2).	\$85,000	3-5 years
12. Replace composite samplers (x2).	\$50,000	2-3 years

\* the allowance for item 4 includes for the replacement of 1 media pack.

**Table 10.3: Summary of Recommendations – Building and Grounds**

<b>Recommendation</b>	<b>Cost Estimate</b>	<b>Priority</b>
1. Repair chain link fence.	\$2,500	Maintenance – ASAP
2. Re-set roof screws.	\$0.00	Maintenance - ASAP
3. Monitor for proper operation of building systems.	\$0.00	Ongoing

## **Facility Condition Overview**

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Facility Condition Index (FCI) scores indicate that the majority of Township facilities are in stable condition, with several buildings performing well below a 10% FCI threshold. However, two facilities — Echo Bay Hall (30.08%) and Sylvan Valley Hall (23.95%) — demonstrate significantly elevated deferred maintenance levels relative to their replacement value.

These facilities are aging, functionally outdated, and present accessibility challenges, including limitations related to AODA compliance. Based on their condition and long-term service viability, both buildings are approaching or have exceeded the reinvestment threshold, where replacement or consolidation may be more cost-effective than continued rehabilitation.

The Township is currently exploring strategic facility planning options, including potential decommissioning of certain aging halls and consolidation of community uses into a modern, accessible, and energy-efficient facility. Any future decisions will consider lifecycle costs, service levels, accessibility requirements, and long-term financial sustainability.

## **Replacement Forecast Methodology**

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Replacement dates generated within the Township’s asset management software are based on estimated useful life (EUL) assumptions and original installation dates. These projected dates serve as planning-level indicators only and do not represent automatic replacement commitments.

Actual replacement timing is determined through a combination of condition assessment, operational performance, risk evaluation, regulatory requirements, and financial capacity. As such, proposed replacement years may be adjusted through the annual capital budgeting process.

The Township’s asset management software is used as an analytical tool to identify assets approaching the end of their estimated useful life and those exhibiting lower condition ratings. These outputs inform review and prioritization; however, renewal decisions are ultimately guided by professional judgment and Council-approved financial planning.

## Example – Condition-Based Prioritization (Office Facility)

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Assets rated in “Very Poor” condition are considered to be at or beyond their expected service life and may present operational, safety, or compliance risks.

For example, within the Municipal Office facility, a “Very Poor” rated component may include:

- Exhaust fans
- Carpet flooring
- Council office chairs

These components are evaluated for replacement or rehabilitation based on:

- Condition assessment findings
- Risk of service disruption
- Regulatory or safety compliance
- Cost-benefit analysis
- Available funding

This example illustrates how asset condition, rather than age alone, informs lifecycle decision-making and capital planning.

The response framework below provides general guidance for how assets are prioritized according to condition category.

### Condition-Based Response Framework

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<b>Condition Rating</b>	<b>General Description</b>	<b>Typical Response Approach</b>
Very Good	New or recently renewed asset in optimal condition	Routine maintenance and monitoring
Good	Minor wear, functioning as intended	Preventative maintenance and scheduled inspections
Fair	Moderate deterioration, reduced performance	Monitor condition and plan future rehabilitation
Poor	Significant deterioration, increasing risk of failure	Prioritize for rehabilitation or replacement evaluation
Very Poor	At or beyond service life, elevated operational or compliance risk	Evaluate immediate rehabilitation or replacement, subject to risk and funding review

## Facility Lifecycle components

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### Lifecycle Activities

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Asset lifecycle activities consist of the following components.

Rehab	lifecycle events which may extend the life of the asset
Replace	activities once the asset has reach its end of life
Disposal	accounting and engineering activities which may have ongoing activities
Climate Change	Impact and access to renewable technologies

### Typical Ice plant Components

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Compressors require routine maintenance to ensure the longevity of the individual unit. The following table outlines manufacturer's specifications for the routine maintenance of such compressors.

Although, it is important to note the overall run hours for each application. The twenty-year duration is based on approximately 3,000 hours of operation per year, or approximately 60,000 hours of service.

Refrigeration system motors and refrigeration controls are typically installed into an electrical control panel inside the refrigeration room. CSA certified electrical controls panels can be custom and standard sizes depending on the requirements.

### Operational Maintenance

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Operational	Routine corrective actions that occur to ensure the asset continues to function
Routine inspection	Used to measure or observe condition of asset
Preventative maintenance	To insure asset meet or exceed its life expectancy
Reactive maintenance	Repairs done after asset is no longer functioning
Replacement	End of life replacement of asset

### Equipment Rehabilitation Maintenance

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Early life	0-3000 hours oil change
Mid life	6000 top end inspection
Later life	9000 hours oil change
End of life	12000 major overhaul
Replacement	End of life replacement of asset Asset retirement obligation

## Accurate Lifecycle

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Accurate lifecycle for each asset category is fundamental to establishing proper AM plan. Each lifecycle event is directly attributed to the proper inventory data collection. Each building comprises of various asset categories. Each asset category has a defined life expectancy. Each life expectancy is further defined by the amount of usage. The amount of usage is directly proportional to the efficiency of the unit and overall building.

<b>Category</b>	<b>Life Expectancy (yrs)</b>	<b>Usage /Consumption</b>
<b>Land</b>		
Parks	50	Remaining useful life
Parking lots	25	Remaining useful life
Cemeteries	50	Remaining useful life
<b>Building</b>		
Structural	50	Remaining useful life
Shell	40	Remaining useful life
Electrical	15	Condition rating / Run Hours
Mechanical	20	Condition rating / Run Hours
Inventory	10-20	Condition rating / Run Hours
<b>Fleet / Equipment</b>		
Emergency services	20	Condition rating / Run Hours / Km
Public Works	10	Condition rating / Run Hours / Km
Recreation	20	Condition rating / Run Hours / Km
<b>Transportation</b>		
HCB roads	20	Condition rating/Traffic Volume/Road Class
LCB roads	6	Condition rating/Traffic Volume/Road Class
Gravel	4	Condition rating/Traffic Volume/Road Class
Bridges	50	Condition rating/Traffic Volume/Road Class
Culverts	50	Condition rating/Traffic Volume/Road Class

## Asset Condition Information

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### Non-core Assets

<b>Category</b>	<b>Life Expectancy /useful life (years)</b>	<b>Usage /Consumption</b>
Land	Non-depreciable (No defined useful life)	Not applicable
Buildings	Estimated remaining useful life	BCI
Inventory	Estimated remaining useful life	Condition rating
Fleet /Equipment	Estimated remaining useful life	Inspections

## Core Assets

<b>Category</b>	<b>Life Expectancy /useful life (years)</b>	<b>Usage /Consumption</b>
Roads	Estimated remaining useful life	Engineered Road Condition Rating/ Pavement Condition Index (PCI)
Bridges	Estimated remaining useful life	OSIM & Bridge Condition Index (BCI)
Culverts<3 m	Estimated remaining useful life	Material type, Condition rating

## Core assets Lifecycle Events and Costs

<b>Asset</b>	<b>Lifecycle event</b>	<b>Cost /unit</b>
Roads	Reconstruction	\$ 190 /m
	Resurface	\$ 85 /m
	Double surface	\$ 13 /m
	Maintenance	\$ 3 /m
Sidewalks	Maintenance/Replace	\$ 400 /m
Signs	Replace	\$ 200 each
Streetlights	Replace	\$ 3,000 each
Culvert < 3 m	Maintenance/Replace	\$ 700 – \$2,400 /m
Sanitary		
Sanitary lines	Maintenance/Replace	\$ 700 – \$2,400 /m
Sanitary manholes	Replace	\$ 5,000 each
Water		
Water mains	Maintenance/replace	\$ 700 – \$2,400 /m
Hydrants	Maintenance/replace	\$ 10,000 each
Valves	Replace	\$ 3,000 each

## Inspections

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### Routine Inspection

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When properly monitored, inspections will provide analytical data which can be translated to proper Level of Service and their associated financial requirements Routine inspections

As an integral part of level of service, the Township has begun to electronically collect and manage inspections of both facilities and individual assets. The Township will overtime increase and customize the inspection which will translate to proposed level of service and the Township’s ability to financially afford the established levels of service.

### Workplace Inspections

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Inspections are an essential component of a prevention maintenance program. The process involves carefully examining the assets on a regular basis with a view to:

- identifying and recording actual and potential hazards posed by buildings, equipment, the environment, processes and practices
- recording any hazards requiring immediate attention
- determining whether existing hazard controls are adequate and operational
- recommending corrective action where appropriate

To ensure the effectiveness of the inspections, the Township is working towards establishing specific procedures identifying:

- the frequency of inspections
- the workplaces requiring inspection
- responsibility for conducting inspections, reviewing recommendations and implementing corrective measures
- the qualifications of the individuals who will be carrying out the inspections

Not all annual inspections are always the same, and costs vary. In the case of a compressor

<i>Number of Run Hours</i>	<i>Routine inspection</i>	<i>cost</i>
4,000	Oil Change	\$ 2,000
8,000	Top end inspection	\$4,000-\$6,000
12,000	Oil Change	\$ 2,000
16,000	Major Overhaul	\$10,000

### Water / Sewer Plant Maintenance

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Water and wastewater plant maintenance activities are monitored using a Work Management System (WMS). Monitoring equipment maintenance and calibrations are performed on a monthly basis or in accordance with manufacturer requirements. Flow meter verifications are completed annually, with records maintained both on-site and electronically through the OCWA Hub server. Additional operational details are documented in the 2024 OCWA Annual Operating Plan.

The Township does not operate these facilities directly and works collaboratively with its contracted operator, OCWA, to support effective asset management practices. OCWA provides a rolling 10-year capital forecast identifying anticipated asset replacement and major maintenance

requirements, which informs the Township’s long-term capital planning. Monthly operating costs for plant operations are incorporated into the Township’s annual operating budget.

As service agreements are renewed or amended, the Township will continue to integrate asset management reporting, condition tracking, and lifecycle planning requirements into operational contracts to support long-term infrastructure sustainability, financial planning, and regulatory compliance.

The Township’s drinking water system is subject to annual inspection by the Ministry of the Environment, Conservation and Parks (MECP). The most recent [2025 Drinking Water System Annual Inspection Report](#) confirms regulatory compliance and is included in Appendix K.

### Non-Core Inspections

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The Township has endeavored to collect all inspections performed by staff and outside consultants. These inspections which were recorded on paper are now being electronically digitized and available to staff and management. The Township has taken a proactive approach to measuring Level of service, by adopting the ORFA, RFAM solution and cataloging each piece of inventory as well as the associated inspections. Inspections are classified as Predictive, Preventative and Reactive. These typical Inspections are categorized as regulatory, mandatory, health and safety and occur daily, weekly, quarterly and annually.

Sample of these inspections are;

Fleet	MTO inspections, Fire truck inspections
Building	Subject to internal building inspections
Land	Staff inspection, CSA, for play structures
Inventory	Subject to regulatory Inspections

### Core Asset Inspections

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Roads	Minimum Maintenance Standards
Bridges	OSIM
Sanitary	sewer lines, manholes
Water	water mains, hydrants, valves, clear wells
Storm	culverts

### Sample of Typical Inspection

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The Township maintains records of the results of the inspections required and any cleaning and maintenance operations undertaken. The records shall include the following:

- a) Asset ID and name;
- b) Date and results of each inspection, maintenance, or cleaning;
- c) Name of person who conducted the inspection, maintenance,
- d) As applicable to the type of works, observations resulting from the inspection.

## Fleet Inspections

Perform all necessary inspection as per MTO requirement

## Electronic Service Request / Work orders

The Township has begun adopting an electronic work order system which it intends to deploy during the 2026 calendar year. Failed inspections lead to the creation of work orders. Work order status are monitored to validate established Level of Services.

The screenshot displays a web application interface for 'All Work Orders'. At the top, there are tabs for 'Active' and 'Closed', and a refresh indicator showing 'Next refresh in 14:55'. Below the tabs, there are buttons for 'Over Due', 'Due', and 'Near Due'. The main content area is a table with the following columns: 'Edit Work Order', 'Case ID', 'Complainant', 'Subject', 'Lead Support', 'Service Category', 'Equipment Type', 'Deficiency', 'Priority', 'Address', 'Status', 'Created\_Date', 'Expected\_Date', 'Print', and 'QR Code'. The table is currently empty, displaying 'No records to display.' and 'Item 0 to 0 of 0'. The interface also includes a search bar, a 'Save State' button, and a 'Disable paging' checkbox.

## Level of Service Overview

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### The Township has adopted By-law #23-2176 prescribing user fees for service

Level of Service (LoS) is a balance between user expectations for overall quality, performance, availability, and safety versus affordability.

LoS requires asset category, performance measurement, a current measurement, a target measurement, an achievement date, an approximate cost, and a priority assigned to each performance measurement.

Asset management plans typically comprise of theoretical models which need to be vetted against operational models concluding with practical realities. LoS can be considered the practical component of an asset management plan. Operational and practical data is used to establish and validate LoS which in turn will feed into the financial component. This closed-loop approach will either validate the AM plan or indicate required changes to the financial strategy. LoS is a key driver which influences asset management decisions, and depending on asset type can be either condition or age based.

LoS outlines the overall quality, performance, availability and safety of the service being provided.

LoS contains a number of distinct categories:

- Service Identification
- Financial
- Township risk
- Community Expectations
- Technical component
- Strategic component

## Level of Service Policies

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The core purpose of a Township is to provide services to residents and other stakeholders. Physical assets are simply a portion of what is required to deliver the various levels of service as determined by the Township. The Township needs to ensure that the infrastructure performs to meet the level of service goals at an affordable and sustainable cost. The objective of Levels of Service analysis is to find a balance between the expected levels of service and the cost of providing that level of service. Determining Township level of service policies requires first developing a baseline for acceptable and affordable levels of service. This is done by first examining present-day service levels, community needs, regulatory or legal obligations and the cost-of-service delivery. Once present-day service levels have been examined, this baseline can be compared against level of service expectations.

Level of Service (LoS) outlines the overall quality, performance, availability and safety associated to Township assets and services. LoS is a balance between user expectations for overall quality, performance, availability and safety, versus affordability.

There are three (3) distinct categories of LOS:

- Township risk
- Asset life cycle cost implications
- Financial Options

The first step in establishing a LoS is an accurate and up to date inventory. Information such as remaining life and condition ratings are essential in calculating Township risk associated to an assets or services.

To develop a functional AM plan, one of the most urgent issues is determining an achievable and affordable level of services. This requires;

- 1) The design of Level of Service, must be relevant to the Township and its citizens.
- 2) The LOS must be related to both the technical performance and user expectations.
- 3) Establishing a set of readily measurable performance indicators for each asset category.
- 4) An evidence-based analytical review for the prediction of asset condition and service life.
- 5) Connecting condition ratings, age based, replacement value and remaining service life, to generate a 10 year plan
- 6) Predictions from remaining service life, maintenance, rehabilitation, and reconstruction costs.

## The Process

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### **Levels of Service analysis may involve:**

1. Developing
  - Customer vs. Technical Levels of Service
  - Current vs. Expected Levels of Service
  - Use of performance measures
  - Financial validation
2. Communication
  - Receive input from staff
  - Receive input from citizens
  - Communicate the Levels of Service to stakeholders
  - Council approval of Levels of Service strategies
3. Update
  - Updating the Levels of Service Analysis on a yearly basis

## Financial Investment

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The management of physical assets, their **selection, maintenance, inspection and renewal** plays a key role in determining the operational performance and viability of organizations that operate assets as part of their core business. Operational data is used to establish and validate LoS which in turn will feed into the financial component. This closed-loop approach will either validate the LoS strategies or indicates required changes to the financial strategy.

### Level of Service Matrix

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Determining the desired levels of service for asset is achieved with consideration of a number of factors including costs, user expectations and government mandated and minimum requirements. LOS outlines the overall quality, performance, availability, and safety associated to Township assets and services. Each asset category can have its own Key Performance Indicator, current measurements, target measurements, achievement date, approximate costs associated to each component and a priority listing based on staff and council consensus.

There are three (3) distinct categories of LoS:

- Township risk
- Asset life cycle cost implications
- Financial options

LoS outlines the overall quality, performance, availability and safety of the service being provided. Technical levels of service (TLS) outline the operating, maintenance, rehabilitation, and renewal strategies.

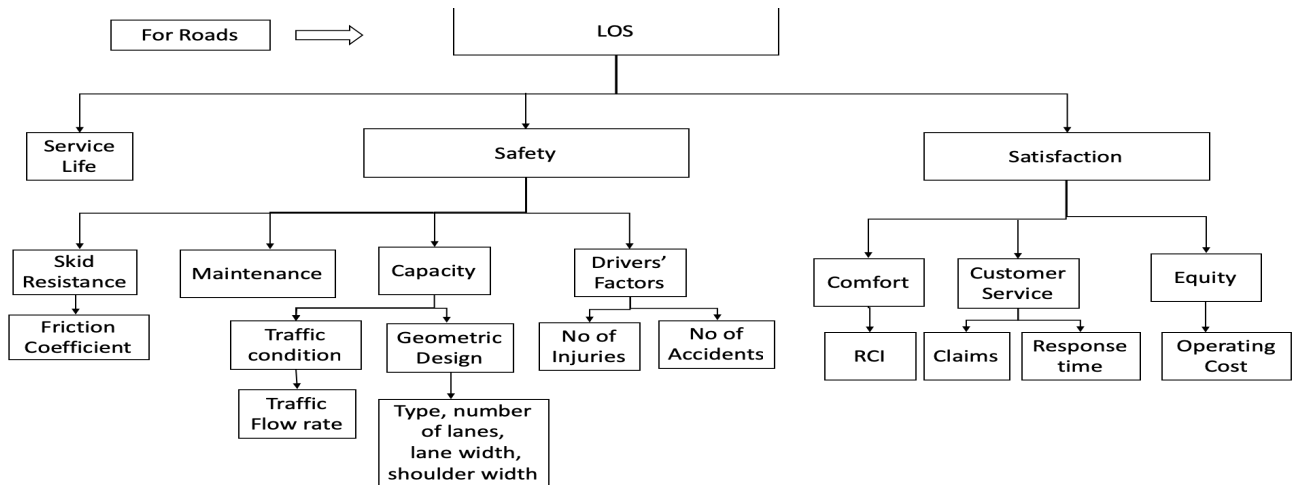
TLS outline the operating, maintenance, rehabilitation, renewal and upgrade activities expected to occur. TLS must be considered that also look at the risk associated with providing the service. Proposed targets for customer and technical levels of service must be included as part of the asset management strategy. Performance measures should be developed, and the actual results achieved reported and updated annually.

The target levels of service must be reviewed on a regular basis to determine if they are appropriate and achievable. Consideration should be given to risk and cost in the development of target levels of service. All assets carry a level of risk for their users. Generally, when conducting risk assessment, two key factors that come into consideration are frequency of use and cost of improvement. Acceptable levels of risk may vary depending on their frequency of use.

### LoS Hierarchy Samples

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#### ***Roads Samples of LoS Break down Structure***



## Proposed Level of Service

The Township’s proposed Levels of Service for the next ten years focus on maintaining current service standards while improving risk-based decision-making and data-driven asset management.

Given the Township’s asset condition profile, financial capacity, and data maturity, the proposed Levels of Service emphasize the preservation of existing infrastructure, prioritization of high-risk assets, and gradual enhancement of asset management practices rather than significant service expansions.

The proposed Levels of Service are considered achievable and affordable within current funding constraints, provided that asset renewal is prioritized based on condition, risk, and regulatory requirements. Where funding limitations exist, the Township will manage associated risks through phased implementation, preventative maintenance, and continued monitoring of asset performance.

Asset Category	Current Level of Service	Proposed Level of Service (10-Year)	Key Risk Considerations
Roads & Transportation	Generally good condition with ongoing maintenance	Maintain current condition through preventative maintenance and prioritized rehabilitation	Accelerated deterioration if funding is deferred
Bridges & Culverts	Regulated inspection-based service	Maintain compliance with OSIM and prioritize lifecycle renewal	Structural and safety risk
Water & Wastewater	Regulatory compliance-based	Maintain compliance and prioritize reliability of critical assets	Service disruption and regulatory risk
Facilities	Mixed condition with reactive renewal	Transition toward risk-based and planned renewal	Health, safety, and service interruption
Fleet & Equipment	Generally serviceable with aging assets	Prioritize high risk and end-of-life replacements	Operational reliability

<b>Asset Category</b>	<b>Current Level of Service</b>	<b>Proposed Level of Service (10-Year)</b>	<b>Key Risk Considerations</b>
Non-Core & Natural Assets	Variable service levels	Maintain current service levels while improving data and oversight	Deferred maintenance risk

Land							
ASSET SUB TYPE	PERFORMANCE MEASUREMENT	TARGET MEASUREMENT	CURRENT MEASUREMENT	ACHIEVEMENT DATE	APPROXIMATE COST	PRIORITY	LEGISLATIVE REQUIREMENT
Buildings and Facilities	AODA Compliancy	all buildings to be AODA compliant					
Buildings and Facilities	Building Condition Index						
Buildings and Facilities	Capacity/ availability (# of accessible hours/ handicap accessible)	collect # of patrons using the various township facilities					
Buildings and Facilities	energy efficiencies	achieving federal net zero emissions				High	
Buildings and Facilities	establish and manage custodial services - in house cleaning - third party supplies	pre and post town hall usage	weekly		\$500.00		
Buildings and Facilities	establish and manage custodial services - pest control - third party		quarterly		\$815.00		
Buildings and Facilities	Number of Citizens complains (% of population)	to respond within 72 hrs and assess	5%				
Buildings and Facilities	Regulatory (Building code compliancy)						
Buildings and Facilities	Safety (incident reporting)						building code
Buildings and Facilities	Safety /Regulatory (Health and Safety Inspections)	all area's to be health and safety compliance via WISB	monthly		\$200.00		WSIB
Buildings and Facilities	Safety /Regulatory (Health and Safety Inspections fire extinguishers, safety lights, exit signs)	all area's to be health and safety compliance via WISB	monthly		\$200.00		WSIB
Buildings and Facilities	Water well inspection (Boiler room)	water tested monthly (information to follow shortly)					
Buildings and Facilities	Salt and Sand Dome inspections		annually		\$200.00		
Buildings and Facilities	Public Works Garage inspections		daily		\$50.00		
Buildings and Facilities	Town hall inspections		daily		\$50.00		
Buildings and Facilities	Community Hall inspections		daily		\$50.00		
open space	provide safe and clean open spaces						
open space	Park / Edifice inspections		annually		\$500.00		
open space	Park playground		monthly		\$50.00		can/csa-z614
open space	ground maintenance						
open space	ball park maintenance						
cemetery	grounds maintenance - third party		4/month - 7 months		\$250.00		
	desire to digitize ownership information						

Emergency							
ASSET SUB TYPE	PERFORMANCE MEASUREMENT	TARGET MEASUREMENT	CURRENT MEASUREMENT	ACHIEVEMENT DATE	APPROXIMATE COST	PRIORITY	LEGISLATIVE REQUIREMENT
Fire	Water Pumpers	Annual Test	Annually		\$2,000		
Fire	Ladder	Annual Test	Annually		\$1,500		
fire	provide access to citizens within 15 minutes						
	track number of yearly calls	50-70					
	Fire Prevention	Multiple Avenues to reach the public	multiple times annually		Budgeted \$5000 annually		
	Training	All Fire Fighters Level 1 and 2 Trained			Budgeted \$15000 annually		
	fire inspections	yearly inspections of commercial buildings					
Equipment	SCBA's	Annual Test	30 / year		\$55 each		
Equipment	Bunker Gear	Annual Test - For all Gear	4 sets/yr		\$70/set		
Equipment	Defibulators	Annual Check	Replace/3 yrs or after each use		\$350/set		
Equipment	Air Tank Compressor	Annual Inspection	Annually		\$1,400		

Structures							
ASSET SUB TYPE	PERFORMANCE MEASUREMENT	TARGET MEASUREMENT	CURRENT MEASUREMENT	ACHIEVEMENT DATE	APPROXIMATE COST	PRIORITY	LEGISLATIVE REQUIREMENT
Culvert <3m	visual inspection	yearly	quadrants		\$6,500.00		
Bridge	# of bridges with Load Restrictions						OSIM
Bridge	Bi Annual OSIM Reports						OVER THE PAST 10 YEARS THE TOWN HAS REPLACED 3 OF THE EIGHT BRIDGES. RITTER, TUIRA AND WELLER
Bridge	collect and maintain Bridge Condition Index above 70 BCI		every 2 years		\$4,000.00		OSIM

Fleet / Equipment							
ASSET SUB TYPE	PERFORMANCE MEASUREMENT	TARGET MEASUREMENT	CURRENT MEASUREMENT	ACHIEVEMENT DATE	APPROXIMATE COST	PRIORITY	LEGISLATIVE REQUIREMENT
Generator	Backup generator - Emergency Evacuation Centre	Weekly monitoring/annually maintenance check	wkly monitoring		\$1000 annual		
Garden Equipment	Before use Check all levels fuel/oil, Circle check,	approx. 80 /yr for multiple equipment pieces	before every use		\$1,600.00		
Medium Duty Vehicle	Daily Check all levels coolant/oil, Circle check, / Every 200 hours Manufactures recommendations				\$4,000.00		
Light Duty Vehicle	Daily Check all levels coolant/oil, Circle check, / Every 200 hours Manufactures recommendations				\$8,000.00		
Heavy Duty Vehicle	deliver all planned and preventative maintenance as outlined by manufacturer				\$24,000.00		
Fire	Water Pumpers	Annual Test	Annually		\$2,000		
Fire	Ladder	Annual Test	Annually		\$1,500		

**Transportation**

ASSET SUB TYPE	PERFORMANCE MEASUREMENT	TARGET MEASUREMENT	CURRENT MEASUREMENT	ACHIEVEMENT DATE	APPROXIMATE COST	PRIORITY	LEGISLATIVE REQUIREMENT
Road Section	Safe Transportation Network	PCI > 60	PCI . 50	2022-02-01	\$50,000.00	Medium	Ontario regulation 239/02 minimum maintenance standard (MMS) SP-021 MANUAL , SP-022 MANUAL , SP-024 MANUAL, SP025 MANUAL
Road Section	Number of citizen requests	50 requests per year	TBD	2023-02-01			
Road Section	% of fully accessible roads	1	TBD	2022-02-01			2023 ROADS NEEDS STUDY OVER THE PAST 10 YEARS TOWNSHIP HAS INCREASED HARD SURFACE FROM 64% TO 77%
Road Section	adoption of MMS (Road patrol)	daily	seasonal changes		\$100.00		
Road Section	Collect Daily Traffic count						
Road Section	Roads needs study	every 5 years			\$4,000.00		
Road Section	collect / maintain traffic count		when required 2 hr/rd		\$100.00		
Road Section	Brushing	160 hrs	160 hrs annually		\$8,000.00		
Road Base	Ditching		when required / 2km		\$2,500.00		
Road Section	Graveling - In house		8 km /yr		\$10000/km		
Road Section	Gravelling - Third Party (Larger Projects)		8 km every 4 years		\$14000 /km		
Road Section	Dust control on Gravel Roads		40 km/year		\$1350/km		
Road Section	Resurfacing - flex asphalt		8 km/yr		\$75000/km		
Road Section	Sweeping		20 hrs /yr		\$50/hr		
Road Section	Winter maintenance (as per MMS)	minimum maintenance standards	MMS		\$650,000.00		Ontario regulation 239/02 minimum maintenance standard (MMS)
Road Section	collect / maintain sign inventory	inventory list to come			\$1000/yr		
Signs	reflectivity	2 x year OR as required by mms			\$1000/yr		MMS
Signs	replace broken signs as per MMS	as per MMS			\$5000/yr budgeted		MMS
Road Section	street lights						

## Risk

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### Prioritization Matrix

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Assigning a base line value from 1 – 100 for each Township asset category will enable to prioritize and compare various asset categories.

### Probability of Failure (PoF)

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Not all assets deteriorate at the same level. As the assets deteriorate the probability of failure increases. PoF for an asset category requires a combination of attributes including baseline weight, material, classification, condition rating and useful life. These values are normalized to a value from 1-5.

### PoF Matrix

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PoF	Rating	Remaining useful life	Condition Index
5	Very Poor	0-10% of UL	0 – 39
4	Poor	11-50 % of UL	40 -50
3	Fair	51 -70 % of UL	51 - 70
2	Good	71-85 % of UL	71-85
1	Very Good	86 - 100% of UL	86-100

### Consequence of Failure (CoF)

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Not all assets pose the same Consequence of Failure level. Even within the same category various pieces of equipment pose different risk or consequence of failure. CoF can be derived for each asset category from the calculation of an asset category baseline weight, and 5 criteria including; safety, operational, environment, finance, and legal.

### Components of Consequence

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1. **Environmental conditions:** description and details outlining the severity of the consequence associated to the environment
2. **Financial conditions:** description and details outlining the severity of the consequence associated to the financial
3. **Health and safety conditions:** description and details outlining the severity of the consequence associated to the Health and Safety
4. **Legal:** description and details outlining the severity of the consequence associated to the Legal
5. **Operational conditions:** associated description and details outlining the severity of the consequence associated to the Operational

## Climate change

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The AM policy applies to all assets owned by the Municipality whose role in service delivery requires deliberate management by the Municipality. The Municipality will use a service based (qualitative) perspective when applying this policy to municipal assets, rather than a monetary value (quantitative). The service-focus intent of this policy differentiates its requirements for identifying assets from the capitalization thresholds that are developed for the purposes of financial reporting. For this reason, the capitalization threshold developed for financial reporting will not be the guide in selecting the assets covered by the asset management planning process

Climate change can be monitored in two ways. First the resilience to a 100-year storm and secondly the consumption of energy.

The threat of a 100-year storm to the environment can be mitigated through proper utilization of natural resources as well as the proper management of storm assets including road culverts. To this end the township is proactive in managing its storm network including proactive ditching and properly inspecting all culverts and bridges.

The Municipality continues to invest in energy management and efficiency solutions. Within the Municipality one of the largest consumers of energy is the Sportsplex. The Municipality has begun the electronic management of ice depth which will correlate to energy consumption

- Energy efficiency
- Climate change adaption
- Climate change mitigation

## Energy Demands

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The Township has begun collecting energy consumption as part of the AM requirements.

- Meter each individual building
- Identify inventory assets which consume energy
- Collect energy usage by building and associated various assets

O.Reg. 507/18 broader public Sector energy reporting and [Conservation and Demand Management Plans](#) must include the summary for the year and must include the following information for each of the public agency's prescribed operations:

1. The name of the building or facility.
2. The address of the building or facility.
3. The total floor area of the indoor space of the building or facility.
4. The type of building or facility
5. A description of the days and hours in the year during which the building or facility is operated.
6. The total amount of each type of energy that was consumed in the year to operate the building or facility and that was purchased by the public agency.

## Energy Consumption

<b>2024</b>	<b>Total GHG Em Intensity</b>	<b>Electricity</b>	<b>Propane</b>	<b>Gas (m<sup>3</sup>)/ Cost/year</b>	<b>Water</b>
	<b>kgCO<sub>2</sub>e/m<sup>2</sup></b>	<b>kwh</b>			
Environmental Centre	40.61	196561		8487 m <sup>3</sup> / \$3,510.92	74.9 ML Raw 54.2 ML Treated
Fire hall	42.9	5771		5320 m <sup>3</sup> / \$2,315.04	Not Metred
Sportsplex	9.61	245761		5593 m <sup>3</sup> / \$2,406.25	486m <sup>3</sup>
Milligan Gazebo	0.7	628			Not Metred
Sylvan Hall	35.79	3584	3982 Litres		Well water
Tower Lake Cabin	0.31	1029			No Water
Echo Bay Hall	41.12	12191	926 Litres/ \$1065.83	5283 m <sup>3</sup> / \$2,274.20	549m <sup>3</sup>
Landfill	6.12	5769			No Water
Museum /Lending Library	89.15	2604		3348m <sup>3</sup> / \$1,569.77	30m <sup>3</sup>
Water Tower	27.33	16008			Included above
Municipal Office	4.09	21089			20m <sup>3</sup>
Municipal Garage	108.28	18744		6307 m <sup>3</sup> / \$2,752.45	Well water
Memorial Park		583.85			
Streetlights		46624.80			

## Financial

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### Replacement Construction Pricing

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Square footage construction pricing

- Fire Stations \$546.00 sq. ft.
- Maintenance facilities \$450.00 sq. ft.
- Municipal offices \$400.00 sq. ft.
- Ice arenas \$320.00 sq. ft.
- Museum \$500.00 sq. ft.
- Library \$380.00 sq. ft.
- Salt dome \$130.00 sq. ft.
- Sand domes \$ 43.00 sq. ft.

### Land Betterment

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The Township will begin to update the land data inventory to define which individual inventory has had betterments to it.

### 10-year Capital Plan

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The Township's 10-year capital plan is informed by a component-level asset inventory organized by asset category and subcategory. Inventory data includes installation date, estimated useful life, replacement value, and condition rating, which collectively support lifecycle forecasting.

The capital forecast incorporates projected renewal and rehabilitation activities, estimated replacement costs, and anticipated timing based on condition, risk, and service requirements. Where applicable, betterments or upgrades are identified to reflect evolving regulatory standards or service level expectations.

The 10-year plan provides a forward-looking financial projection that identifies anticipated capital expenditures, available funding sources, and potential funding gaps. This approach supports long-term financial sustainability and aligns with the Township's lifecycle management strategy under Ontario Regulation 588/17.

### Equipment Utilization

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An equipment utilization report augments the decision-making capabilities by identifying the usage consumption of each inventory piece. This is achieved by collecting the amount of capacity and current consumption of each inventory piece. This report will combine remaining useful life with equipment utilization defining what Additional steps the Township can take to extend the life of the asset.

### Inflation Report

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Having collected the purchase price and installation date the Township can forecast the replacement cost based on life expectancy and proposed inflation rate.

### Energy Consumption

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Beyond the Echo Bay Waste Disposal Site closure liability, the Township has limited additional asset retirement obligations. Previously existing underground fuel storage tanks were decommissioned and remediated in 2024 in accordance with environmental regulations.

The Township continues to monitor its asset inventory for potential retirement obligations that may arise under applicable legislation. Where future Council decisions result in the decommissioning or demolition of municipal facilities, associated costs will be identified through appropriate engineering review and incorporated into capital planning and financial reporting processes.

Similarly, where municipal wells or other regulated infrastructure assets are permanently taken out of service, the Township will complete abandonment procedures in accordance with provincial requirements. Any associated retirement or remediation costs will be recognized and managed in alignment with applicable accounting standards at that time.

### **Echo Bay Waste Disposal Site – Asset Retirement Obligation**

The Echo Bay Waste Disposal Site represents the Township’s most significant Asset Retirement Obligation (ARO). In accordance with Public Sector Accounting Standard PS 3280 – Asset Retirement Obligations, the Township recognizes a legal obligation associated with landfill closure and post-closure care activities.

A [Landfill Liability Report](#) prepared by Kresin Engineering Corporation (August 13, 2025) provides an estimate of the Township’s closure and post-closure obligations. The report identifies required activities upon closure of the site, including:

- Final cover placement and vegetation
- Drainage control features
- Leachate monitoring systems
- [Groundwater and surface water monitoring](#)
- Gas monitoring and recovery systems
- Ongoing maintenance and regulatory reporting

Based on the engineering assessment and financial assumptions outlined in the report (including projected closure in 2066, 30 years of post-closure care, inflation and discount rate assumptions), the present value of the estimated closure and post-closure costs is **\$1,833,153.49**. This amount represents the recognized landfill liability and is reflected in the Township’s financial statements and Financial Information Return (FIR).

The Township continues to operate the site in accordance with its Environmental Compliance Approval (ECA) and applicable Ministry of the Environment, Conservation and Parks (MECP) requirements. Closure planning and liability calculations will be updated periodically to reflect changes in site capacity, regulatory requirements, cost assumptions, and financial conditions.

Detailed liability calculations and engineering assumptions are provided in Appendix X of this Asset Management Plan.

<b>Item</b>	<b>Cost (From Kresin Report)</b>	<b>My Assumed Incidence</b>
Closure	\$912,400	July 1, 2066
Post-Closure Monitoring	\$20,830 per annum for 30 years	July 1, 2067 to 2096 inclusive

The Township conducts ongoing environmental monitoring at the Echo Bay Waste Disposal Site in accordance with its Environmental Compliance Approval (ECA). Annual monitoring and operations reports document groundwater quality, surface water monitoring, leachate management, and operational compliance activities. The [2024 Landfill Annual Monitoring & Operations Report](#) and the [2023 Groundwater & Surface Water Monitoring Report](#) are included in Appendix T and Appendix Z.

## Citizen Engagement

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The Township has made citizen engagement a priority. It has begun adopting innovative technologies to collect and analyze citizen satisfaction.

The Township is measuring 5 key indicators including operational, security, amenities, professionalism, accessibility



## Occupiers Liability Act

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In accordance with the Occupiers' Liability Act, the Township is responsible for taking reasonable care to ensure that municipal properties are maintained in a condition that is reasonably safe for users.

The Township conducts regular health and safety inspections of municipal facilities on a monthly basis to identify and address potential hazards. Inspection findings are documented and corrective actions are tracked to maintain an appropriate standard of care.

As part of ongoing asset management improvements, the Township intends to digitize inspection processes to enhance record-keeping, improve tracking of corrective actions, and support defensible documentation practices.

## Patron Feedback

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The same QR code technologies used for inventory will be implemented within the Township facilities to gather pertinent user satisfaction. The QR codes will be both affixed to public places as well as on the Township website enabling the users to quickly scan a QR code and provide feedback on 4 key performance indicators including;

- Cleanliness
- Amenities
- Security
- Professionalism
- Accessibility



These surveys details are available to Township management team while the results are graphically reviewed.

## Incident Reporting

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From both a liability and level of service perspective, the Township has begun to electronically collect and manage incident occurrences with Township owned properties.

## **Plan Adoption and Review**

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This Asset Management Plan has been prepared in accordance with the requirements of Ontario Regulation 588/17 under the Infrastructure for Jobs and Prosperity Act, 2015. The Plan provides a strategic framework to support informed decision-making related to municipal infrastructure, levels of service, risk management, and long-term financial sustainability.

This Asset Management Plan is intended to be reviewed and updated on a regular basis, and at a minimum every five years, or as required to reflect changes in municipal assets, levels of service, financial capacity, and regulatory requirements.

This Asset Management Plan was presented to Council and adopted by resolution #26-50 on February 17, 2026.

## Appendices

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Appendix A	<a href="#">Strategic Asset Management Policy</a>
Appendix B	<a href="#">Community Risk Assessment</a>
Appendix C	<a href="#">2025 Emergency Response Plan</a>
Appendix D	<a href="#">Conservation &amp;c Demand Management Plan (2024-2028)</a>
Appendix E	<a href="#">Accessible Customer Service Policy</a>
Appendix F	<a href="#">Multi-Year Accessibility Plan (2023-2027)</a>
Appendix G	<a href="#">10- Year Road Improvement Plan (2022-2031)</a>
Appendix H	<a href="#">2023 Water Tower Inspection Report</a>
Appendix I	<a href="#">Strategic Plan (2024-2029)</a>
Appendix J	<a href="#">2025 Drinking Water System Financial Plan</a>
Appendix K	<a href="#">2025 Echo Bay Drinking Water System Annual Inspection Report</a>
Appendix L	<a href="#">2024 Environmental Centre Overview Report</a>
Appendix M	<a href="#">2024 Bridge OSIM Reports</a>
Appendix N	<a href="#">Culvert Installation Policy</a>
Appendix O	<a href="#">Municipal Modernization – Digital Transformation Report 2022</a>
Appendix P	<a href="#">2025 Sportsplex Structural Review</a>
Appendix Q	<a href="#">2025 Raw Water Intake Inspection</a>
Appendix R	<a href="#">2025 Clear Well Reservoir Inspection Report</a>
Appendix S	<a href="#">Fee For Service By-Law #23-2176</a>
Appendix T	<a href="#">2024 Landfill Annual Monitoring &amp; Operations Report</a>
Appendix U	<a href="#">Official Plan</a>
Appendix V	<a href="#">Zoning By-law #10-1699</a>
Appendix W	<a href="#">2023 Accessibility Compliance Report</a>
Appendix X	<a href="#">2024 Landfill Liability Report</a>
Appendix Y	<a href="#">Tree Canopy By-law</a>
Appendix Z	<a href="#">2023 Groundwater &amp; Surface Water Monitoring Report</a>